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PROCEEDINGS OF THE EAST INDIA ASSOCIATION

PLANNING AGAINST POVERTY IN INDIA: IRRIGATION AND FOOD PRODUCTION

By Sir William Stampe, C.I.E.
(Irrigation Adviser to the Government of India)

The importance of expanding irrigation as a factor in increasing the food supplies of a sub continent in which the population, already excessive in relation to the cropped area, is increasing at the rate of some 4 or 5 millions per year (15 million births less 10 million deaths) can hardly be over emphasized. A graph shows that whilst the total yield of food grains in India has remained fairly constant for the past twenty years the pressure of the population on the land—already as high as 800 to 1,000 souls per square mile in some of the great plains—has increased at an alarming rate. One result of this human overload on the land has been a steady diminution in the standard of nutrition of a large proportion—reliably computed at one third—of the population (or, say, 150 millions) who are at present existing on less than two-thirds of the minimum diet necessary to maintain healthy life. The appalling spectacle of the Bengal famine, even if allowance is made for certain transient causative factors, has focused world opinion on the calamity that is threatening India and which must soon occur in catastrophic form unless systematic measures are promptly taken to increase food production in conformity with the rising population.

The palliative adopted in 1943 of importing wheat on a large scale obviously cannot continue as a long term solution in times of post war world shortage. It is hoped to show, however, that a ready remedy lies in the early exploitation of India's vast water resources, both surface and underground, the bulk of which still remains largely undeveloped in spite of all that has so far been done to expand irrigation in various parts of the country. The fact that, as recently established in the United Provinces, the expansion of widespread hydro-electric power can proceed economically *pari passu* with the development of irrigation pumping is a further argument for expediting large scale schemes of ground water irrigation. By means of such a parallel development low-cost energy can be broadcast over the countryside, thus leading to a wide expansion of agricultural industries with irrigation as a base load.

The Production Target

The following basic facts will enable readers to appreciate the part that irrigation can and must play in the food production programme. In presenting them emphasis is laid on the time factor by stressing the value of those short-term—or so-called "emergency irrigation"—schemes, which can yield substantial results in the shape of additional grain within a period of, say, two years, by means of power pumping from wells and rivers. Essential as long-term irrigation projects obviously are, they cannot generally give more food for seven to ten years from the time of projection, and, as such, do no[redacted] responsibility as emergency irrigation adviser. Their potential scope as long-term measures is, however, emphasized later.

Enough additional food must be produced without delay to satisfy two immediate demands if the threat of famine is to be averted, apart from the establishment of a better national food economy:

(*a*) To provide for the annual increase in population, say 5 millions per year, at an all-round minimum consumption rate of perhaps one ton of food grains to five persons per annum, thus requiring a yearly recurring increase of roughly 1 million tons per year.

(*b*) To raise the standard of nutrition of the underfed population referred to above by providing an additional 4 ounces of food grains per capita daily, representing a basic total increment of 6 million tons of food grains yearly. Apart from food grains, in order to secure the balanced diet necessary for healthy human existence, the provision of a large tonnage of vegetables, milk, fruit and other items will be essential. The necessary acreage for producing these can, however, probably be found by crop rotation within the basic food acreage computed below.

It is believed that, say, one-third of these additional quantities can be procured by adopting improved agricultural methods, including the provision of chemical fertilizers at economic rates, leaving the balance of two-thirds of the increased production to be obtained from expanded and improved irrigation.

Economic Value

The value of systematic irrigation in a country of erratic rainfall is twofold. Firstly, by providing sufficient water in the right place, at the right time, it ensures a higher yield from the cropped area, both in so-called "dry" tracts and also from soils at present sparsely irrigated by means of bullock-operated open wells. Secondly, it secures the vast bulk of crops in the areas commanded by the canal system from partial or, sometimes, complete failure in those drought years, say one in seven or eight on the average, when seasonal rainfall fails, thereby serving as a vast insurance system for the food supply of India. Credit is often denied to irrigation projects in this respect when their importance is assessed. The value, both to the cultivators and to the State, of such a service in cycles of low rainfall is incalculable, and it is suggested in passing that more weight should be given to this aspect when irrigation projects are reviewed from the financial angle.

The classification hitherto adopted by most finance departments under which projects are divided under "productive" or "protective" heads, depending on their "direct" contribution (or otherwise) to the State revenues, tends, in the writer's opinion, to react adversely on the useful development of India's latent water resources. Reverting to the direct value of irrigation, it is impossible, within the scope of a short paper, to compute accurately the increased irrigated area that will be necessary to produce two-thirds of the required annual food grain increment. An approximate forecast, however, indicates that, assuming an average increase of production of one-third of a ton per irrigated acre per year, an additional area of 2 million acres must be added every year to compete with the rising population and a further increase of 12 million acres must be secured immediately to produce two-thirds of the basic food shortage referred to above.

Methods of Increasing Irrigation

Irrigation can in general be expanded in the following four ways:

(*a*) By new gravity canal systems taking additional water from sources as yet either (1) not tapped at all, or (2) inadequately tapped for economic reasons.

(*b*) By expanding existing gravity canal systems by means of (1) stabilizing the fluctuating (seasonal) sources of supply by providing storage; (2) increasing the available river flow by pumping into the canals from the sub-soil reservoir where suitable aquifers exist—*i.e.*, in many alluvial tracts; (3) increasing the efficiency (duty) of the canal systems by (*a*) better distribution; (*b*) reducing percolation losses by (1) lining channels and/or (2) regarding them.

(c) By mechanical pumping for local irrigation—*i.e.*, lifting water from (1) tubewells sunk in the great alluvial belts—*e.g.*, the Gangetic plain, the Punjab extra-canal tracts, the coastal alluvial zones of peninsular India, etc.; (2) deep-set rivers flowing at a level too low to command the high riparian tracts by gravity flow; (3) power-operated open wells in non-alluvial areas—*e.g.*, Madras, Mysore, etc. The value of tubewells for providing a safe domestic water supply for adjacent villages, and thus reducing epidemics, requires no emphasis.

(*d*) By indigenous methods, less spectacular but generally applicable throughout India—*e.g.*, open wells, contour bunds and small tanks for impounding surplus monsoon run-off in undulating areas.

As methods (*b*) and (*c*) above are capable of yielding the earliest results, this paper is devoted mainly to them.

NEW GRAVITY CANAL SYSTEMS

A glance at the irrigation map of India shows that most of the great perennial rivers that command the dry zones (where irrigation is most needed) have already been tapped at their most advantageous points—*i.e.*, where they can command the largest dry areas with the least capital outlay on major works. It follows, therefore, that those unlucky regions that now stand in need of water must either remain dry or pay more for it. For not only have the best sites gone, but, owing to the rising cost curve, even the inferior sites must inevitably involve higher capital outlay in their development. It is hoped, however, that the higher cost of post-war construction will not be held as a reason for further postponement of these essential projects.

Extensions of existing canals and the construction of new canals can be effected on the major rivers of the United Provinces, Bihar, the Southern Punjab, also in Sind and Madras. As already stated, these projects cannot, however, be regarded as an immediate solution of the hunger problem.

STORAGE RESERVOIRS

Storage reservoirs besides stabilizing the flow of the larger rivers for extending direct irrigation, also offer an economic source of power. As this power can eventually be utilized for irrigation pumping from both rivers and underground sources, the principles of river storage will be briefly touched upon. The river systems of India, due to erratic or seasonal rainfall, are subject to heavy fluctuations in their flow, a fact which reacts seriously on the utility of the canal and power systems depending upon them.

The great rivers can conveniently be divided into those of (*a*) the Himalayan system, which are mainly snow fed, and (*b*) the Vindhyan, or Central Indian, system, which derive their flow from direct rainfall and rain-fed springs. Thus, by a beneficent provision of nature, the main Himalayan rivers yield their maximum dry weather supply in the hottest season when the demand for the early summer crops (*e.g.*, millets, sugar-cane and cotton) is the highest. The Vindhyan rivers, on the contrary, yield their minimum supply in the hot weather when their spring water sources almost entirely fail.

On the other hand, the monsoon discharge of *all* the main Indian rivers is very much in excess of irrigational requirements—incalculable volumes of flood water not only passing wastefully to the oceans, but taking with them millions of tons of valuable soil at the expense of riparian cultivation. As if to compensate for these vagaries, nature has offered our engineers on almost all the Indian rivers, more especially in the Central valleys, which are more stable geologically than the "recent" rocks of the Himalaya, excellent sites for the construction of storage reservoirs. The main functions of these are thus threefold. (1) To store a proportion—the degree depending upon the features of the site—of the surplus monsoon run-off for dry weather utilization. (2) To reduce as a corollary of (1) the intensity, and thus the erosive effect of the monsoon floods; and (3) to generate electric power, thus conserving the limited coal supplies of the country and reducing the cost, both of heavy industry and—still more important—of irrigation pumping.

Various multi-purpose dam projects are now being examined on the major river valleys of India, notably on the Sone and Ganges in the United Provinces, the Indus River System in the Punjab, rivers in Bombay, and on the Tungabadhra-Godavari rivers in Madras and Mysore. As a specific instance, the Nayar project on the tributary of the Ganges may be briefly quoted. By impounding approximately 1 million acre-feet (or some 40,000 million cubic feet), some two-thirds of the annual run-off normally available from the Nayar catchment (720 square miles), sufficient storage can be obtained by a dam some 600 feet high to maintain the Upper Ganges Canal at its full capacity of 8,400 cusecs, throughout the irrigation season, thereby enabling a large additional acreage of food grains to be secured. Similarly, the Ganges Canal hydro-electric system can be proportionately expanded enabling additional tubewells to be developed in the Ganges valley tract.

In passing, the technical difficulties of harnessing the waters of the Himalayan valleys must be emphasized, especially those prevailing in the seismic zones of the Punjab. The instability of the geological set-up, the hydraulic problem of evacuating vast floods from catchments of high rainfall on to alluvial river beds, added to the earthquake dangers in certain zones, will call for knowledge and resource of the highest order on the part of the engineers concerned.

REGIONAL ASPECTS

Apart altogether from the physical problems involved in developing India's water potential, some reference must be made to the administrative difficulties arising from the political set-up of the country. Whereas both irrigation and power development are the responsibility of the Provincial (or State) Governments concerned, the fact that the main rivers of India often form the boundaries between adjoining administrations has frequently militated against the exploitation of common river resources. Failure to co-operate in such mutual developments is in no small measure due to the absence of an adequate co-ordinating body at the Centre. It was most regrettable, for instance, that the post of Inspector-General of Irrigation was suspended some fifteen years ago. It is to be hoped that the recent setting-up of two Central Commissions, one for co-ordinating power policy on regional lines and the other for securing uniform river control for joint irrigation and navigation projects, will assist to solve these regional development problems.

Adopting the world-famous Tennessee Valley Authority in the Unted States as a pattern, an effort is being made to organize a regional authority with a view to exploiting the resources of the Sone valley in the United Provinces on regional lines for the benefit of cultivation and industry in the U.P., Behar, the Central Provinces and a number of adjacent States. Firm power to the extent of a quarter of a million kilowatts can be developed by means of four storage dams, to be built in stages. Further advantages will comprise flood control, extended irrigation by means of stabilized flow, and improved navigation in the lower reaches of the valley. Incidentally, the Rihand dam on this system can alone furnish power for the vast ground water irrigation scheme outlined in the paragraph below.

Similarly, in Western India there is scope for controlling the rivers of Kathiawar, where, due to lack of co-ordination among the riparian owners, the monsoon floods have hitherto passed wastefully to the sea, whilst millions of acres of dry but fertile land have been deprived of irrigation that scientific storage could have effected. The field for regional co-operation on Indian rivers is, in fact, almost infinite, and it is hoped that an effective lead can be given to the administrations concerned, possibly with the aid of a financial subsidy, to induce them to pool their resources in the interest of cultivation.

GROUND WATER AS A SOURCE OF IRRIGATION SUPPLY

When the writer was invited to return to India in 1943 to assist with the immediate expansion of irrigation for the grow-more-food campaign, he advocated, amongst other measures, the rapid development of power-operated tubewells as a means of exploiting the hidden resources of the great Gangetic plain. Previous experience, notably in the United Provinces, had indicated that, given adequate organization and the availability of cheap power, hundreds of tubewells could be installed yearly, and, as each well can irrigate 400 to 500 acres, a million acres might be secured within two years.

A brief reference to the Ganges valley installation will be helpful here. In 1934-7 some 1,600 wells, each of 1½ cusecs yield, were installed to protect one and a half million acres of which some 800,000 have since been irrigated yearly. The depth of the water table averaged about 25 feet below ground, and a 12½ h.p. motor pump lifts sufficient water to irrigate some 480 acre-feet per well in the crop demand period of, say, 180 days. The fact that water was distributed to the cultivators on a quantitative basis led to such economy in its use that a tubewell system secures a much higher "duty" than that prevailing on the gravity canals on which water is sold on a crop rate basis.

Apart from the direct agricultural value of tubewell water, the introduction of low-cost electric power over an area of many thousand square miles has also opened up vast possibilities for developing village industries associated with agriculture, such as cane-crushing, flour milling, cotton ginning and the like. If such machinery is operated only during the off-peak or non-pumping periods, a highly economic rate can be offered to the villagers, often as low as a halfpenny (or one cent.) per kilowatt hour. Various domestic amenities can also be secured from such a system—*e.g.*, (1) pure water supply; (2) cattle troughs; (3) radio loud-speakers; (4) fruit and fuel trees can be grown around the wells under the supervision of the local operators. There is, in the writer's opinion, no reason why a wide extension of this beneficial system should not be obtained at an early date throughout alluvial India, provided certain prerequisites are furnished by the Central and/or local administrations. These include (1) facilities for the reconnaissance and survey of suitable tracts in regard both to their surface and sub-surface suitability for development; (2) the provision of widespread power networks energized in the first instance from local thermal stations and connected later to the large power stations to be established on adjacent river systems in accordance with an economically co-ordinated development programme.

A HIMALAYAN DREAM

Whilst flying over India lately the writer has frequently asked himself why the tubewell system, which has proved so beneficial in the Upper Ganges valley, should not be extended to similar alluvial tracts in the arid plains below. To answer this rational question it is necessary to examine for a few moments the origin of ground-water supply. Let us trace these sources in the Ganges valley first and then apply the same principles, *mutatis mutandis*, to other—often less favoured—areas. It will be understood that in order to locate a subsoil irrigation system the underground flow in the aquifers (water-bearing sands) of the tubewell tract should be adequate to meet the surface demand for water. Unless this essential condition is secured an ever-increasing lowering of the basic water table of the great plains would be inevitable. Such a result, which has, by the way, actually occurred in vast areas of the Californian valleys recently visited by the writer, would not only increase progressively the cost of pumping tubewell water, but would also throw most of the shallower cultivators' wells out of economic action. Whereas, under the wealthier national economy of the United States, such a calamity can be offset by expensive methods of water restitution, such as wholesale surface "waterspreading," it is doubtful whether such methods could be carried out by the more impoverished agricultural economy of India.

Before proceeding with a vast programme of ground-water exploitation in India, therefore, it is vital that the potential yield of the subsoil sands should be carefully ascertained. The alluvial deposits in the great Gangetic trough between the Vindhyan and Himalayan ridges consist of alternating layers of surface soil, clay and sands of ever-varying thickness and texture. These layers being mostly lenticular are generally non-continuous, at any rate in the upper valley. Southwards, towards Bihar, the aquifers tend to become finer and thus less yielding, and the strata more regular in their occurrence. The water in all these aquifers, which is derived from various sources discussed below, is not static, but is seeping very slowly under the ever-decreasing force of gravity towards the Bay of Bengal. This hidden river, the Saraswati of Hindu mythology, is the basic source of *all* the deep well water required for cultivation in the plains above. It thus constitutes a vital asset in our post-war plans. To arrive at a quantitative estimate of its discharge would involve a difficult and wearisome analysis of factors far too complex in their interrelation to discuss here. The following valuation, however, is illustrative even if inexact.

WATER LIFTING

Taking the depth of the aquifers as, say, 700 feet and the voids in the sand as 40 per cent., the cross sectional area of the Saraswati would be about 150 million square feet for a mean width of trough of, say, 100 miles between the Vindhyas and the Himalayan foothills. Again, assuming the average rate of flow in the upper valley as half a mile per year, the underground discharge might be of the order of 12,500 cusecs, or, say, 18 cusecs per foot of aquifer, compared with 6,000 cusecs, the minimum surface flow of the Ganges River where it emerges from the hills. When considering the safe rate of possible abstraction of pumped water from the upper aquifers it must be borne in mind that the Saraswati receives important reinforcements along its course to the sea. These are threefold:

(*a*) From rainfall (and irrigation) on the tract itself—perhaps 20 per cent. of this water reaches the water table, the fraction depending on (1) the degree of surface vegetation; (2) the ground configuration; (3) the intensity of rainfall (and irrigation); and (4) evaporation.

(*b*) From rainfall on the flanking hills to the north and south, a portion of which seeps into the water table from the porous submontane hillsides and swamps.

(*c*) From the rivers entering the great plain from the north and south—*e.g.*, Ganges, Jumna, Sardah, Gogra, Sone, etc.

It is impossible to evaluate these reinforcements quantitatively, but it can be stated that source (*c*) alone furnishes an important field for expansion of tubewell irrigation.

It has been rightly argued that, as the Ganges meanders southwards towards the sea its sands become finer in texture, and thus less suitable for tubewell development. But each tributary, especially those from the laterite hills to the south in Bihar, contributes its own quota of coarse sand, which forms a suitable "delta" of considerable area for local exploitation. In Bihar, for instance, the Sone "delta" near Dehri already yielded copious supplies of subsoil water.

A similar analysis indicates that suitable conditions occur, but perhaps to a less degree in view of the lower rainfall, in the vast alluvial plains of Western India, notably in the upper zones of the great Indus basin. Again, in the riverain zones of parts of Rajputana, Kathiawar, Baroda, etc., conditions exist which certainly justify a large-scale investigation into the possibilities of tubewell development.

Apart from tubewells, experience in river pumping on the Ganges grid has shown that water can be economically lifted from deep-set rivers on to high bluffs commanding local areas by means of suitably aligned canals, provided that certain conditions are fulfilled. Investigations are proceeding into the economics of river pumping on these lines in various areas where experiments indicate that grid power can be economically utilized for such irrigation.

Finally, as one flies over these arid areas of India one cannot but wonder why the millions of horse-power in the hills above should crash to waste yearly within sight of toiling peasants beneath whose feet millions of tons of water seep silently through the sands to the sea. The Himalayan dream which the writer and his friends have long cherished visualizes the early linking of these great resources for the benefit of cultivators whose interest it has been their privilege to serve.

DISCUSSION ON THE FOREGOING PAPER

A MEETING of the Association was held at Caxton Hall, Westminster, on Thursday, September 27, 1945, when Sir WILLIAM STAMPE, C.I.E., lectured on "Planning Against Poverty in India: Irrigation and Food Production." Mr. ARTHUR HENDERSON, K.C., M.P., occupied the Chair.

The CHAIRMAN, having expressed his pleasure at taking the Chair, said that as those present could perhaps imagine he was still feeling his way in his new office as Parliamentary Under-Secretary of State for India and Burma. During the short time he had been in the India Office, however, he had been very much impressed with the great need for improving the standard of living of the Indian people and with the necessity of removing the spectre of famine which constantly menaced their lives. It seemed to him that the problem of food supply in India had to be attacked in many directions, but, as in all tropical countries, the greatest determining factor was the influence of water supply on India's own crops.

Sir William Stampe, who had been Irrigation Adviser to the Government of India for two and a half years, had had as good an opportunity as any living person to study the food problem both generally and from the point of view of irrigation, and the meeting would listen with the greatest of interest to what he had to say. When Sir William retired from the service of the Government as Chief Engineer in charge of irrigation in the United Provinces he had become well known in India and beyond as an enthusiastic champion of the application of electric power to the problem of irrigation. It was natural, therefore, that when the loss of the Burma rice imports threw upon India the necessity of increasing her own food supply, Lord Linlithgow should send for Sir William Stampe and ask for his services. As soon as the Air Ministry could be induced to release him from his war-time service in the R.A.F. Sir William flew to India, and from that time to this he had been at work on tube-well schemes, river lifts and every other device his experience could devise to bring water to the land requiring it.

He had very great pleasure in introducing Sir William Stampe, not only as a man who had made wheat grow where none grew before, but as a man who had driven water uphill to achieve it.

After the lecture the Chairman said he was sure the meeting felt much indebted to Sir William Stampe for his address. He himself did not propose to touch upon political topics that afternoon except to say that the Government intended to do their utmost to bring about an early realization of full self-government for India. Whilst, however, those vital constitutional issues were so prominently in their minds they must never, he thought, allow themselves to forget the urgent work which needed to be done in India in the economic sphere. Sir William had shown them how much was being done and how much more could be done regarding irrigation, and he felt that by taking full advantage of the knowledge possessed by British engineers a great deal could be done to convince the people of India of Britain's sincere desire to help them in every possible way.

Sir William's task had not been an easy one in war-time; machinery had been hard to come by, labour was scarce, and skilled labour even harder to find, but through all that he had maintained the flying tempo which he brought from the R.A.F., driving machines, Governments, men and manufacturers without sparing himself. His contribution to the solution of the food problem of India was a notable one, and time might well show that he had laid the foundation of the solution of India's food problem.

Sir Bernard Darley congratulated Sir William Stampe on a most interesting and most timely lecture. He did not think, however, that Sir William had emphasized sufficiently the dreadful danger of the increase of population in India. From 1921 to 1931 the population of India had increased by 11 per cent. and from 1931 to 1941 by 15 per cent. In the future, if nothing interfered, that increase would be compound, and if it continued the population of India would double itself before the end of the present century. Nature had, however, her own method in dealing with such matters, and in the past there had been various plagues and epidemics which had reduced the population. Now, medical science had got the better of some of those plagues and epidemics. That, in conjunction with greater prosperity due to irrigation schemes, helped to increase the population. In the Punjab, where people were particularly prosperous, due to irrigation, the increase was 20 per cent. against 15 per cent. for the rest of India. It was obvious, therefore, that something radical be done to increase the food supply in India.

Irrigation would undoubtedly be a tremendous factor in increasing supply, but unfortunately irrigation had a limit. It was essential to be v about that; if Sir William's forecast of an increase of two million acres of irrigation a year was fulfilled that limit would be reached rather quickly. There were very few large tracts of waste land in India where there was water available, and in many of the areas already irrigated the intensity of irrigation could not be increased to any great extent without danger of water-logging.

Again, storage schemes could not produce anything like the amount of water obtained from the flow of the great rivers already harnessed. Sir William mentioned a scheme on the Ganges for storing 40,000 million cubic feet of water; that, however, would only irrigate half a million acres of land every year. Other storage schemes would also only irrigate a limited area. For the tubewell schemes in the United Provinces one must give Sir William the greatest credit, but unfortunately there were only a limited number of areas in India where the substratum was such that those schemes could be used. He felt, therefore, that while everything possible must be done to increase the area of irrigation in India, other means to increase the supply of food must also be looked for and the output of the land must be improved. One way of doing that was by means of improved seed, a method which had already been adopted to a considerable extent. Of the wheat crop, however, only 25 per cent. was now sown with improved seed.

Sir William had also mentioned manure. That, too, would help, but he thought that in the long run they would have to look to an improvement of existing cultivation rather than to irrigation for any great increase in food supply. He thought there was a danger of fixing too much attention on irrigation. Unless something was done by every possible means there was no doubt that disaster faced India. They were about to hand over India to a National Government, and it was to be hoped that that Government would be able to take the necessary steps to avert that disaster. One of the biggest problems to be faced was that of the moneylender. Many people in India would not grow a good crop to be seized by the moneylenders. He had read that one Indian State Government was taking over the agricultural indebtedness in the State; perhaps Government could do something in this direction, though it would be difficult.

Another great trouble was the smallness of the holdings in India. There the ideal solution would be collective farming, but no alien Government could impose that on the cultivator, who would certainly resist. He did think, however, that something could be done in that direction in the future, probably by a National Government, provided it were strong enough.

Lastly it was to be hoped that education would soon advance sufficiently to enable a vigorous campaign on birth-control to be launched with some chance of success.

Sir JOHN WOODHEAD said that undoubtedly the provision of an adequate diet for the people of India was one of the most important problems awaiting solution. As Sir William had said, it had been estimated (though the estimate was only approximate) that 30 per cent. of the total population of India was underfed. That, however, was not the complete picture; the diet of a still larger proportion, although sufficient in quantity, was inadequate in quality to keep them in a healthy state. In other words, under-nutrition and malnutrition were widespread throughout India, and therefore the greatest problem facing the country today was an increase in the production of food, not only from the point of view of the major food grains, but from that of increasing the supply of protective foods such as fruit, milk, eggs and vegetables—*i.e.*, those which gave the vitamins so essential to a healthy existence.

Irrigation was undoubtedly one of the most potent ways in which food production could be increased. Great strides had been made in irrigation during the last forty years—he believed that the increase in the irrigated area had been 8 million acres since 1921-22. There was, however, still scope for developing irrigation, though not so much as there had been forty years ago. Many of the Provincial Governments had under examination, with a view to construction, many large irrigation schemes. The Sind Government were considering the construction of two additional barrages across the Indus River—one on the upper and one on the lower Indus—and it was estimated that when those barrages had been constructed an additional 2½ million acres of land would come under cultivation.

There was also scope for irrigation in Madras.. In that province there was one scheme which it was estimated would provide another 1½ million acres of irrigated land. Even in Bengal there was scope for irrigation works. Land in Western Bengal was losing its fertility owing to the lack of flooding from the big rivers. The Provincial Government had several schemes under consideration, all designed with a view to bringing the fertilizing silt on to the land in Western Bengal.

Irrigation was, therefore, one of the most potent factors in solving the tremendous problem of food supply in India. Nevertheless, he agreed with the last speaker that one must not lose sight of the fact that other means of increasing production must be proceeded with. Manure was very important in that connection. The rice tracts were already well supplied with water, either through ample rainfall or irrigation, and therefore an increase in the yield per acre—which was essential—would have to be obtained by means of manure.

The first essential in the production of an increased food supply was water; second came manure; thirdly improved varieties of grain, and finally prevention against pests and diseases. Water, however, was undoubtedly the most important factor which would assist in solving the food problem caused by the increasing population. The population of India would continue to increase during the next twenty-five years; population growth was very difficult to estimate, but it was unlikely that the increase in the population of India would be less than 100 millions during the next twenty-five years. That gave some idea of the importance of increasing the production of food if the standard of living in India—which was low enough today—was not to fall even lower.

Sir Bernard Darley said that he had just one question to ask which concerned the Bombay Plan. The authors of that Plan had said that the irrigation of India could be trebled within the next fifteen years. The present area irrigated from all sources was about 60 million acres out of a cropped area of 217 million acres. He felt that this was a gross over-estimate, and he would like to know what Sir William thought could be done in fifteen years. His own feeling was that the Government would have done very well if it increased the irrigated area by 25 per cent.—*i.e.*, by 15 million acres.

Sir Alfred Chatterton congratulated Sir William Stampe on the extraordinary success of his development of the Ganges Valley tubewell scheme. Only those who had had to deal with the development of well-irrigation could really appreciate the many difficulties which Sir William must have encountered in bringing such a big scheme to success.

In 1941 he had noticed that it was a century since the beginning of irrigation work by British engineers in India, and in an article in the October number of the Asiatic Review of that year he had thought it worth while to summarize what had been done during that period. During the last hundred years an average of one and a half crores of rupees had been spent annually on irrigation work. During the last few years before the war the rate of expenditure had greatly increased, and when one came to look at the programme of possibilities put forward by Sir William one realized that the rate of expenditure would be twenty to thirty times higher.

He had been very interested in the monograph shown by Sir William regarding the work done in the Ganges Valley. He himself had studied that area, and he had found that there were roughly 35 million acres of cultivated land which were not irrigated at all, and he had already suggested that at least 10 million acres of that area might be cultivated at a cost of 60 crores of rupees. Today the cost would be considerably more—perhaps 90 or 100 crores. If that work was carried out it would not only increase the amount of food produced, but would give a further fillip to the engineering industries in Bengal and Bombay, where a good deal of the work was done by natives and which would probably cease now that the war was over.

With regard to the question of fertilizers, he believed that some disting
been made between the manurial value of water from reservoirs and w
flowing rivers. The latter was said to contain a large amount of silt whic

posed to be very valuable. It seemed to him very important that the relative manurial value of river water, well water and stored water should be ascertained.

One of the most important steps which could be taken at the present time regarding the development of irrigation would be to stop the waste of water in existing irrigation works. When the major projects were originally designed a conservative estimate of the quantity of water available was usually assumed, whilst at the same time a very liberal allowance of water per acre irrigated was allowed. There was a general consensus of opinion that in consequence the area under irrigation had been unduly restricted. The time had now come when a large measure of economy in the use of water should be introduced in the national interest, and this could be affected without prejudice to the existing cultivation.

Dr. H. S. Batra congratulated Sir William Stampe on his brilliant paper, and said it seemed to him that when the food supply was short and one-third of the population of India was under-nourished it was wrong to allow food to be exported. He did not feel that the export of foodstuffs from India was justified. On the contrary food should be imported into India from Australia. Such a course would benefit both India and Australia. There were other ways of increasing the standard of nutrition of India; there were certain tracts of land open to cultivation, for instance. There was also the question of cultivating by tractor, and then there were vitamins which could be supplied from cod-liver oil and so on.

He felt that some of Sir William Stampe's suggestions for irrigation were not practical. His grandfather, for instance, had been persuaded to install a tubewell, but as soon as he had gone to the city the people of the village had disconnected it and filled the tubes with stones. Those stones were still there today! It must be remembered that there were practical difficulties of that kind to contend with.

Mr. Brander said that it appeared that as far as short-term policy was concerned Sir William Stampe had been very successful, but when it came to long-term policy it must be remembered that the verdict of the Royal Commission on Agriculture in India was that no matter what improvements were effected the pressure of population would rapidly overtake them. That was already happening in the Punjab Canal colonies. At first the people were prosperous, but they multiplied so rapidly that the standard of living fell greatly. For that reason he had been glad to see a recommendation by the recent Famine Commission that birth-control or family limitation should be encouraged. He felt that that was the best, and the only permanent, remedy. No matter how many engineering improvements were made regarding food production the pressure of population would overtake them rapidly.

A great parallel to the case of India was the case of Ireland during the last century. In 1847 the potato famine had occurred; that had killed 1 million people, and the result of that, plus emigration to America, and fewer and later marriages, was that the population was now half of what it was 100 years ago. Ireland was now much more prosperous than it was then.

It seemed to him that the most important thing for India was education—especially adult education—regarding family limitation. Unless that were done there would always be under-nutrition and over-population in India.

Sir William Stampe, replying to Sir Bernard Darley's suggestion that the scope for tubewell irrigation was very limited, said that a widespread investigation was now to be carried out in India in conjunction with the Geological Department to ascertain what further tracts were available for development. It was hoped that comprehensive plans for the irrigation of such areas as were declared suitable would then be drawn up by the Administrations concerned. It should then be possible to determine to what extent tubewell irrigation could contribute to the solution of the food problem. He himself was of the opinion that, given adequate organization for co-ordinating hydro-electric power in the adjoining hills with ground-water pumping, up to 1 million acres could be added to the irrigated area each year in the northern alluvial plains of India.

With regard to the estimates quoted by the Bombay Planners, referred to by Sir

Bernard Darley, he did not know how the authors had arrived at the figures. It was possibly a shot in the dark, as he himself did not think there was scope for such a large amount of additional irrigation; at any rate, in the early future.

Sir John Woodhead had referred to the necessity for supplying India with a balanced diet; he thought that the requisite produce for such a diet could be obtained by the rotation of crops within the acreages he had given.

One speaker had referred to the relative advantages of silted water and clear water. He agreed that very often the coarse sandy silt of the rivers was more of a nuisance than a benefit, but fine colloidal silt carried in suspension usually possessed fertilizing qualities.

Dr. Batra seemed to be under some misapprehension as to the type of tubewell scheme advocated. A system of irrigation tubewells owned and operated by absentee landlords might well prove a total failure. The system previously introduced in the United Provinces, and which he now advocated should be extended, was a system of tubewells owned and operated by the State, who would be responsible for the proper maintenance.

Major-General Sir **Frederick Sykes**, in proposing a hearty vote of thanks to the Lecturer and the Chairman, congratulated Sir William upon his most interesting address. The subject was of such great scope that all the points put forward in the discussion were germane to it. The historian of the future would find an enduring monument of our rule in the vast irrigation schemes which we had established. He (Sir Frederick) was particularly interested in irrigation, as he had had the good fortune to be Governor of Bombay at the time of the opening of some 6½ millions of acres of desert under cultivation. The importance of irrigation did not merely lie in the prevention of famine when the monsoon failed. The great economic problem of India was the phenomenal increase in population which was the inevitable result of the Pax Britannica. One of the ways in which the extra millions could be fed was by greatly extending the area under cultivation.

It seemed to him that perhaps one aspect, and a very important one, which had not been touched upon was a tendency in all the schemes mentioned to overlook the personal element and to forget that the man primarily involved was the consumer of the water and the actual producer of food—the ryot. Unless one could arouse the interest of the peasant whose livelihood and the possibility of raising his standard of life depend largely on a supply of water for his fields, the schemes would not work. The peasant was intensely interested in his fields, and if he were given the opportunity and knowledge to irrigate his land, there is no doubt that he would help with the other methods which had been put forward in the discussion. The prime necessity was to enable the peasant to help himself.

Another great problem which had not been mentioned was that of the money-lender. When he, Sir Frederick, was in India one of the Rulers of a State in the Bombay Presidency had already brought in a scheme for gradually eliminating the money-lender and by this means enabling the peasant to take greater advantage of the Village Improvement Scheme which had been launched throughout the Presidency.

He also congratulated the Chairman, Mr. Arthur Henderson, on his appointment as Under-Secretary of State for India, and wished him on behalf of the East India Association the utmost success in the work to which he had set his hand.

Captain S. T. **Binstead** writes: The paper shows that India might soon be facing a further crisis on the food front, with famine round the corner. The alleviation of such a position is largely in the hands of our engineers to produce quickly capital equipment for the many irrigation, hydro-electric and other schemes projected. I would appeal to the British industrialists, both electrical and mechanical, to give India the highest priority possible for the delivery of the orders already placed and those about to be placed. It must be simply frustration for the promoters of these schemes, who have the progress of India at heart, to be told that they must wait at least two years, in some cases much longer, for delivery of the necessary plant.

In most cases India is prepared to accept prices quoted in this country, but they are rightly insisting that delivery must be given in a reasonable period. Both Mr.

Tata and Mr. Birla and other recent visitors have made public statements on these lines since their return to India.

I would plead with the Board of Trade and other official bodies to give first priority support to our industrialists for speedy delivery of these orders, and clear the line, and, incidentally, the bottlenecks, for the raw materials required in the workshops. I am sure we may rely on the sympathetic support and consideration of our distinguished Chairman today in this all-important matter.

TRANSPORT IN INDIA IN WAR-TIME

By the Hon. Sir Edward Benthall, K.C.S.I.

His Excellency the Viceroy gave to a recent meeting of transport officers in New Delhi the slogan "Transportation is War." There is, of course, nothing spectacular about the maintenance of an army or of a civil population, however vast in numbers, for in transport matters smooth operation is always taken for granted until there is a breakdown. Today I welcome the opportunity of placing on record something of what the personnel of the Indian ports and railways have done in war-time and how they have done it.

When the war broke out the ports of India were in good trim, but the railways had not yet emerged from a decade of economy which had resulted in their running to a high degree of peace-time efficiency, with all wagons under a pool control, but with no margin to meet the abnormal demands of war.

In the early stages of the war in the West India's part was that of a subsidiary base for the Middle East campaign. Her ports handled the relatively small volume of traffic with ease. The railways parted with 4,000 miles of railway track. practically the whole stock of maintenance sleepers, 8½ per cent. of their metre gauge engines and 15 per cent. of their metre gauge wagon stock and a quantity of broad gauge stock as well. Four railway workshops were turned over entirely to munitions, others partially, and at one time 20,000 men were so employed. It may be an exaggeration to say that the battle of El Alamein was won in the workshops of the Indian railways, but they made a most valuable contribution, as more than one Middle Eastern commander has testified.

In addition, 280 out of some 1,750 railway officers volunteered for war services. The provision of these transport experts, while a most valuable contribution to the war effort, turned out in the later stages to be one of the greatest handicaps to the railways themselves, which had to carry the heavier load and incidentally to supervise 180,000 additional men with fewer trained officers than in the leisurely days of peace. In addition such tasks as the improvisation of rationing over 850,000 railway men had to be faced. They rose to the occasion splendidly but the burden thrown on the trained supervisory staff remaining was immense. Trained man-power was always a major difficulty.

India the Main Base

When Japan overran South-East Asia in the winter of 1941-2 a new situation arose. India at once became the main base for the war against Japan. The Bay of Bengal was closed to shipping: coal, jute and tea, which were normally railed to Calcutta for shipment, had to be carried up to as much as 1,500 miles over the long rail journey to Western and Southern Indian ports. War stores and troops had to be landed in the West Coast ports and railed, sometimes a matter of 2,500 miles, to the far northeast corner of Assam. The ports of Bombay and Karachi were congested with diverted and frustrated cargoes with no consignor to remove them, and at one time there were 250 ships lying in Bombay harbour. The ports gradually cleared the congestion, and the railways kept essential supplies moving. We received valuable and sympathetic help at this stage from the Anglo-American Ports Mission.

In August, 1942, the railways had to face their most bitter experience. Mr. Gandhi's "open rebellion," directed largely against all means of communication, resulted in the damage to a greater or lesser degree of 289 railway stations, the destruction of electrical installations and signal cabins, sixty derailments, and the tampering with track, of which in one place two miles were removed. The damage was effected with some technical skill, and significantly enough was most thorough and dangerous on some of the main lines of communication to the Burma front, notably on the East Indian Railway and on the Oudh and Tirhut Railway to Assam. Prompt action by the military and civil authorities and by the railwaymen themselves averted disaster. It is to the credit of the railwaymen that they were true to their salt. Not a single railwayman, I believe, was proved to have taken part in the rising, and many received decorations for faithful and gallant service in most trying circumstances. Normal traffic was resumed on the E.I. Railway at the end of September and on the O. and T. Railway on November 2, but several hundred million net ton miles of traffic had meanwhile been lost.

The Turn of the War Tide

Throughout 1943 the strength of the British armies on the Burma frontier was being built up, and the Americans went on developing what is one of the romances of the war, the air lift "over the hump" to China. The railway, handicapped by a break of gauge and a ferry crossing of the Brahmaputra at Amingaon, had, with the wholehearted and efficient support of the I.G.N. and Rivers Steamship Companies, to maintain an ever-increasing volume of military traffic to the railheads for the American airfields and for the Imphal and Ledo roads, while at the same time carrying very large volumes of traffic for the doubling of certain sections of the line, the development of yards, the construction of the petrol pipe line from Calcutta via the Brahmaputra Valley to China, and the maintenance of the augmented civil population. Two of the main bridges over the Beki and Balkadoba Rivers which had been washed away by floods had to be rebuilt. Much of the traffic still emanated from far distant depots or from the West Coast ports, but with the war taking a turn for the better the Bay of Bengal was suddenly reopened to traffic and the tonnage of imports into the port of Calcutta jumped from 117,000 tons in July of that year to 254,000 tons in August.

This unheralded increase threw an undue strain on the port; a shortage of cranes for handling heavy military consignments and an insufficiency of reception depots threatened a serious congestion, for you cannot for long put into a port more than you can take out of it. It became apparent that it was necessary to key up the working of the different agencies operating and using the port, but it was not until the middle of 1944 that Mr. F. A. Pope, C.I.E., of the L.M.S. Railway was appointed Regional Port Director, and assisted splendidly in improving all-round co-ordination and efficiency and consequently the volume of traffic. Meanwhile, the operation of clearance in King George's Dock by the Americans had been of great assistance, and steady general improvement had been achieved. The main anxiety during all this period was really the stability of the dock labour, which was affected by the exodus which took place on the Japanese advance on India in 1942, and again by the accurate daylight bombing by the Japanese of the docks in December, 1943.

Simultaneously with the intensification of military activity on the lines of communication to Assam in 1943 the Bengal famine developed, and to crown the difficulties there occurred one of the greatest physical disasters which the Indian railways have ever experienced. The River Damodar burst its banks and carried away the four main lines of the East Indian Railway connecting Calcutta with the coalfields and the Mofussil. There is probably no single spot on the whole Indian railway system where such a disaster could cause greater inconvenience at any time, let alone at the crisis of a war. The energy and determined improvisation of the staffs of the E.I.R. and B.N.R., however, ensured that the fullest use was made of the remaining three lines available into Calcutta, essential supplies were somehow kept going, and, above all, as the Woodhead report clearly showed, the volume of food imports into Calcutta from the north and west, so far from decreasing, was actually increased, and failure of transportation into Bengal was in no way a contributory factor towards the situation which arose there. The work of restoring and safeguarding the breach was handled by the railway engineers with the most commendable energy.

THE INCREASING LOAD

As the cold weather wore on the load on the eastern communications continued to become heavier and heavier. At this stage Mr. Inglis, of the L.N.E.R., and Colonel Appleton, of the Pennsylvania Railroad, came out and gave most valuable help in suggesting various methods of speeding up traffic. At the same time we began to get the advantage of the delivery of metre gauge engines and wagons from America and of the first of the improvements to line capacity on the lines of communication which incidentally comprised not only the Assam front but also the Arakan. The Brahmaputra ferry was doubled and later trebled and facilities for transhipment at Parbatipur and Santahar greatly improved. The engineering staff of the railway did well. But it became obvious that to convert what had pre-war been a poorly equipped line into a key military communication system something else was necessary, and that something was extra staff and extra driving force. At one time 40,000 out of the available stock of 67,000 metre gauge wagons were concentrated upon the Bengal and Assam Railway at the cost of traffic congestion elsewhere, but the call for volunteers of all grades to operate them met with limited success, because in spite of the high pay offered service in Assam at this juncture was not attractive. The British military transportation units available were limited.

The Americans came to the rescue. On March 1, 1944, 4,500 skilled American railway men were superimposed on the existing staff on 748 miles of the metre gauge line from Parbatipur to Ledo. Under Colonel (now Brigadier-General) Appleton, C.B.E., succeeded by Brigadier Yount, they took over the traffic operation on that section of the line, an experiment which, thanks to the fine spirit of co-operation shown by both the Americans and our own staff and the inspiring energy of the Americans, turned out a brilliant success. Although from the earlier days of 1942 the receipts at railhead were, with negligible exceptions, always in excess of the releasing capacity of the depots at railheads, it is unquestionable that this result could not latterly have been obtained without the drive which enabled the Americans to utilize the improving capacity, for they increased the lift in their time by at least 125 per cent. It would be difficult to praise the American military units too highly for the grand job of work they have done. They have, however, been the first to recognize the fine support given to them by the staff of the Indian railways and inland steamship companies. Our own men were, of course, entirely responsible for delivering the troops and stores on to the American section of the line, and for operating the remaining 40,000 miles of railways.

When the Japanese invasion took place in April, 1944, the railways stood up to the test, and the thanks of the S.E.A.C. Commanders have been received in generous measure for the emergency conveyance of troops and stores to railhead in support of the triumph of air supply which enabled the Japanese to be defeated disastrously at Imphal and subsequently to be chased to Rangoon.

In 1945 the general pressure on the ports and railways steadily continued and extended to South India. We had indeed worked up to the climax of launching the big amphibious operation against Malaya just at the precise moment when Japan collapsed. This was mercifully turned into the despatch only of an army of occupation. It is no secret that Bombay was one of the main embarkation ports. The terrific explosion of an ammunition ship in April, 1944, had put the whole of the Victoria and Princes Docks out of action, but the energetic action of the Army engineers restored these docks to fine working order for military purposes by November, 1944, and it is noteworthy that even before that date imports and exports had been remarkably well maintained in what was left of the docks.

This short story for lack of time can give no account of the other activities of the transport services in organizing road transport controls, the procurement and distribution of Lease-Lend vehicles and parts, the improvisation of lorry group schemes for the emergency construction of airfields and other military works, the better use of coastal country craft, inland water transport and coastal shipping and the development of producer gas units of which India has in use ten times the number ever put into operation in the United Kingdom, and so forth.

PASSENGER TRAFFIC

One of the greatest difficulties which the railways faced was the great increase in civil passenger traffic, due partly to war activity, but mainly to the fact that when an Indian has money in his pocket travel he will, whatever the conditions of comfort. The reduction in passenger train services, to provide for the military load, has been some 37 per cent. Longer trains have been run and conveniences such as restaurant cars cut out or reduced, but the problem has been, broadly speaking, to fit 160 per cent. of normal passenger traffic into 80 per cent. of normal passenger accommodation. Passenger travel continuously resembled the conditions of Bank Holiday travel or the hopping season here, and, of course, the heat and the distances are even more trying. The Indian public has been very patient, but the crowds which on occasions adorn the footboards, the buffers and even the roofs of the trains are a feature which we hope will soon cease. We just could not provide the army of officials necessary to put a stop to such methods of travel.

On the goods side the transport services can claim that though much of the less essential traffic was delayed, there was never a breakdown of essential movement either through the ports or on the railways. Troops and military stores were delivered reasonably punctually and the civil machine was kept going. A great deal of this was due to the success of the priority organization which, set up by Sir S. N. Roy, K.C.I.E., in good time and operated by picked railway officers, gave priority to movements in consideration of their urgency and essentiality, arranged programmes and special assistance to essential movements, gave quotas of wagons, diverted movements to coastal shipping and other forms of transport where suitable, zoned and rationalized in order to make more capacity available, restricted or banned unnecessary and uneconomical movements and kept a check upon waste of capacity. This organization was undoubtedly a key factor in ensuring that the right foodstuffs, stores and other goods were in the right place at the right time.

ENCOURAGING PROSPECTS

It is not out of place to say a word regarding the effect of the war on the future. The prospects are, in my opinion, encouraging. To take first the ports, the estimated annual war-time capacity of the seven major ports in tons, excluding bulk petroleum, country craft cargoes and bunkers, has been increased by additional construction of berths and by other means from some 19·7 million tons to 24·8 million tons. It may be accepted that the ports will be able to deal with a higher tonnage of civil cargo of all kinds in post-war years than of mixed cargo during the war, and should be able for some years to handle comfortably the increased tonnage calculated to be forthcoming as the result of post-war development.

The railways, now Government owned and operated, have considerably developed their line capacity on many of the important sections. By the time present orders for wagons in India and locomotives and wagons from overseas are completed, and allowing for some cancellation under Lease Lend arrangements, some 1,400 engines and 50,000 wagons, broad and metre gauge, will have been added to the pre-war total of some 7,500 engines and 200,000 wagons at a capital charge which, owing to the procedure adopted in dealing with the large war-time railway surpluses, means that the railways will not be overburdened with excessive war costs. Most of these, particularly of the engines, are in replacement of overage stock, and some particularly from the United States have been of a war pattern with a relatively short life. Nevertheless, the railways should start the post-war period in a better position for power and wagons than ever before, for maintenance of rolling stock has by all testimony been well preserved, better perhaps than on the home railways. The coaching stock, however, is in a pretty poor state, and more passenger engines will be required.

The opportunity now occurs to provide a better class of carriage for third-class passengers, and full opportunity will be taken to achieve this and to provide other amenities for lower-class passengers who contribute so much to the earnings of the Indian railways. There are good prospects, therefore, that the Indian railways, as one of the world's largest commercial undertakings, with a capital of Rs. 800 crores, will enter on the post-war period in a relatively sound technical and financial condition, although there are plenty of arrears of general maintenance and development to make up. They will, however, have to face intense competition from the roads since the vigorous development of roads and road transport is one of the major items of India's post-war programme.

These results have been obtained only by the close support of the military authorities, other departments of the Government of India and the Ministry of War Transport in Berkeley Square, with all of whom relations have been of the happiest nature. As General Lindsell, Principal Administrative Officer, G.H.Q., India, said on a public occasion, "The railways in India have never let the Army down, and I feel I can say with confidence that the Army will not let the railways down." I can testify most cordially to the truth of the latter part. We had splendid backing. The Railway Trade Unions, too, gave most loyal and valuable co-operation. But in the long run the safety and speed of operation depend upon the individual attention to duty of the driver and guard, the gangman and the workshop staff, the signalman, the crane-driver, the coolie and other humble people who to their honour kept the wheels turning and the ships moving steadily throughout the war.

DISCUSSION ON THE FOREGOING PAPER

A MEETING of the Association was held at the Caxton Hall, Caxton Street, on Monday, October 1, 1945, with the Right Hon. Lord PETHICK-LAWRENCE, Secretary of State for India, in the Chair.

The PRESIDENT of the Association, Major-General Sir Frederick Sykes, welcomed Lord Pethick-Lawrence and wished him the best of luck in the great office he now held. He would inform Lord Pethick-Lawrence that the Association had been in existence for nearly eight decades and throughout its long life it had done its utmost to get the two races together, to understand each other, to help each other, and if there was any direction in which it could help the new Secretary of State he had only to ask.

Lord PETHICK-LAWRENCE then took the Chair. He thanked the President for his kindly introduction, and would only say that he felt it a great privilege to come to the Association with its long history and to occupy the position of Chairman.

Sir Edward Benthall was to give a paper on a subject on which he was specially qualified to speak—namely, the war transport of India. Sir Edward had had a long and distinguished career in India. In the year 1942 he consented to become a member of the Executive Council in order that he might take charge of the war transport of India.

Sir EDWARD BENTHALL then gave his lecture.

The CHAIRMAN said that Sir Edward Benthall had given a most interesting and informative address. The main theme of his own remarks arose out of the old saying that an army moved on its stomach, and by its "stomach" was understood today every item from the commissariat to the supplies which the modern army needed in order to achieve its objectives.

Sir Edward had covered almost the whole ground of war transport during the years he had control of it, although no doubt he could have added more had time permitted. One matter which he did not touch upon which it fell to the speaker to recall to the audience was that of the most valuable services which Sir Edward himself rendered in acting as the controller of the whole of war transport. The people of this country and of India owed a great deal to him for the self-sacrificing way in which he gave up his own personal interests to do this public service. As a result of his action large numbers of the citizens of this country and of India had been enabled to contribute to the common cause.

The speaker would emphasize Sir Edward's tribute to those who helped him to carry out his task, to the Railway Board, to the managerial staff, and to the employees of the railways, whether European, Anglo-Indian, or Indian, who, because of their loyalty, devotion and efficiency, enabled the great system of war transport to be carried through.

There were two matters in particular which Sir Edward touched upon which he would like to emphasize in a little greater detail. One of the problems which faced the war transport was that the men and military depôts in India had been devised to deal with the normal requirements; they were situated mainly in the north-west in order to deal with trouble on the frontiers. In this war the centre of gravity of the military operations was not in the north-west but in the north-east, and that involved improvisation which was of supreme importance for the carrying on of the war. Improvisation was always difficult and tested the initiative, ability and resources of those who had to forge the implements by which it was carried out.

Another matter was wagons. In the early days of the war a great deal of the manufacture which could have gone into the making of the wagons necessary to assist the railways was diverted to other channels, and India and this country, to a large extent, was not able to do as much in the production of wagons as was required. That need was met from other sources, in the main, but as the war went on and productive capacity in India increased there also developed a considerable power to produce wagons, and the stock in hand would be of great value as the days went by.

The very large part played in transport by means other than the railways should be kept in mind, and now that the war had come to an end and the future was being faced that element must not be forgotten. If it be true that transport was war, then surely it was true that transport was peace. It was the means by which demobilization could be consummated, and it was as urgent a problem as the carrying on of the war to see that transport was available to effect demobilization to the extent required.

Looking forward to the years of peace and reconstruction—it was more than reconstruction, it was construction for India to a degree which India had never experienced up to now--all the resources of the country had to be mobilized, the goodwill of the people of every section and walk of life had to be mobilized. In the world of the future the workers would play a more and more important part, and all these things had to be brought to a perfection in the days to come which they had not had. For instance, the road system in India, wonderful as it had been, still needed development. Great roads had been built, but there was room for a very large measure of further development of second- or third-class roads. India was not a country of great towns; it was a country with an enormous number of villages, and it was essential for the future life of India that the villages should be brought into touch so that, not only during the good months of the year but during the difficult months of the year, there was access not only from one village to another but to the main lines of communication.

Sir Leonard Wilson (late President of the Railway Board, India) said that when Japan succeeded on the eastern front and India was turning from the west to the east there was great confusion, but Sir Edward Benthall throughout all the troubles and the disputes which occurred between Government departments always maintained a steady bearing, and gave confidence not only to those working with him but to those in other departments.

When the war started the Indian railways had just pulled through a very severe period of depression; they were in debt to the extent of about Rs. 80 crores, but it had been possible to discharge this debt owing to the very heavy traffic of the war and also to save a substantial sum to be used for the rehabilitation of the railways and to meet unanticipated needs in the future. After the last war conditions were very much as they were now, but the railways had no depreciation fund and no resources with which to overtake the arrears of wear and tear which had occurred during the war. The setting up after the last war of the depreciation fund had placed the railways in a very much better position. In adjusting the contributions to be made from railway surplus revenues to general revenues great assistance had been received from Sir Jeremy Raisman (Finance Member of Council).

Sir Edward Benthall told him when he arrived in India that he was surprised to find that the efficiency of the railway department of the Government of India was certainly no lower than that of the British Government departments. As Sir Edward had said, the railway workshops were employed on war work. In addition to the workshops, which comprised about 75 per cent. of the machine tool capacity in India, the railways also trained 38,000 men for the military railway units and 30,000 men for the labour department. This was done in addition to the training of the additional staff required by the railways themselves. These facts, reinforcing what Sir Edward had said, spoke of the splendid work which the railwaymen did. Over 95 per cent. of them were Indians, and a central service of that description had a cementing value throughout the whole country. One heard of trouble between Muhammadans and Hindus, but when the two worked together in a common employment such as the railways there was never such difficulty. It was a service which cut across provincial borders; it went throughout the whole country and had advantages which some of the other services did not possess.

Sir Edward had said that the Government of India owned most of the railways. When war broke out there were, however, still five major railways managed by boards in London. These were taken over by the State during the war. It was considered that even in peace-time it would be difficult to take over these railways, but it was found possible despite the war. Four minor railways were also taken over.

The shortage of skilled railway personnel was obvious in all branches of railway work, and the Board had to administer nearly a million men and 30,000 miles of track with an officer cadre at headquarters of something like forty men. Such figures made one realize some of the difficulties of administration with a shortage of staff.

He worked with Sir Edward with the greatest pleasure, and he knew that all railwaymen serving under him felt the same. The effect of his ability to smooth over difficulties had been of the greatest value to India's war effort.

Mr. H. S. Malik (Prime Minister of Patiala) said that the last time on which he had the pleasure of hearing Sir Edward Benthall was when he spoke before the National Defence Council at Delhi. There was then a shortage of wagons and equipment, but the picture he gave was one which inspired his hearers with confidence for the future, and subsequent events have shown that that confidence was fully justified.

So far as the Indian States were concerned there was very little to be said separately for them on this particular subject. The States had more than played their part in the war effort, and Sir Edward's closing remarks emboldened the speaker to say a few words which he felt were very important. Transport was vital to any task of construction or reconstruction. The States realized that as well as anyone in British India and in their plans for the future they were making full allowance for the necessity of developing both the railway and road transport. It was possible to over-emphasize and exaggerate differences between conditions in the Indian States and British India. In many fields of human activity, certainly in the economic and social fields, the problems which faced them in the States were very much the same as those which faced their brothers and sisters in British India.

To put it briefly, the biggest problem of all was the necessity for the raising of standards of living and increasing the prosperity of the people. In that the development of transport would play a very great part, but the States had come to believe that their aim could only be achieved by a better balance between agricultural and industrial life. It was the definite policy in the Indian States to develop industries as far as possible, and in reply to the accusations that were sometimes made that the States were resorting to all kinds of questionable methods for attracting industries he could plead entirely not guilty. The fact of the matter was that the States had been backward in comparison with British India in industrial development and that leeway would have to be made up as quickly as possible.

The mission for which he was in Great Britain was to obtain machinery, to obtain technical advice and assistance, and to ask for co-operation and help in the great task ahead. He was encouraged by the talks he had had here, and he believed there was great hope for the future because there was a growing realization in this advanced industrial country and in the United States of America that by helping to develop the industrial economies of backward countries such as India they would not only be helping India but themselves, because prosperity in advanced industrial countries must ultimately rest on the increase of purchasing power of the masses which would create more extensive markets for their own goods. But there was more than selfish motives at work, and there was a general feeling that the industrially backward countries should be helped along in the interests of peace and general well-being.

Mr. F. A. Pope (Chief Commercial Manager, London, Midland and Scottish Railways) said that he was sent out from this country to undertake a very pleasant piece of work—to increase the capacity of the Port of Calcutta. What that meant was that he was hospitably received by everyone connected with the port, and they then proceeded to increase the capacity themselves. In the course of his stay in Calcutta he had the chance of seeing a certain amount of what the railways were doing, and although he did not regard himself as an expert railwayman he could look at the work with a certain amount of knowledge. He had visited India previously and found great improvements in very many ways.

Sir Edward mentioned the loyalty of the Indian railwaymen. During a war a railway could not be measured entirely by its equipment, because until the human being took control the equipment was not of much use. He would like to pay his tribute to the Indian railwaymen because they worked under great difficulties. The discipline was excellent. In connection with the various crises which arose at Calcutta the railway people did extremely well.

There were many problems of the same kind in this country, the main one being that of personnel. The question of handling personnel had really been the important thing and made the difference between efficiency and inefficiency. There were difficulties connected with the appalling winters which occurred for the first three years of the war, during part of which the oil froze in the axle boxes, so that although conditions were different from those in India the problems were the same and the railwaymen dealt with them exceedingly well.

He added that he was very happy working with Sir Edward Benthall. Nothing that Sir Edward had said had exaggerated in any degree the work which the Indian railways had done.

Mr. Guy St. George Higginson (Commercial Traffic Manager, Bengal-Nagpur Railway) said that there were many problems which the commercial departments of Indian railways had to face, with the constant necessity before them of not impeding transportation. He had no doubt that there were similar problems here, but in India there was the additional complication of a railway system consisting of over forty separate railways with a wide distribution of managerial interests between the Government of India, the Indian States and, for the greater part of the war, boards of companies sitting in London. This rendered rate-making and the apportionment of through rates between railways more difficult, and also necessitated precise rules regarding the interchange of traffic and rolling stock between railways. During the war rating was to some extent simplified because a large proportion of traffic was carried at standard military rates, but claims for goods lost or damaged rose to a phenomenal figure, and were a constant source of worry to both railway administrations and the public.

The closing of the east coast ports on account of Japanese successes early in the war necessitated a large number of new rate quotations for the carriage of traffic in new directions. A considerable proportion of this traffic was reversed when the Royal Navy and the 14th Army restored the situation.

A further duty imposed on the commercial departments of railways was priority control, which, in view of the fact that railways are public carriers, was a drastic departure from normal practice.

In replying, Sir Edward Benthall recognized the force of the Chairman's dictum that transportation today is demobilization. One of the recent difficulties in India was to move troops homewards at the same time as mounting an offensive. He noted in the Chairman's remarks confirmation of the quotation also made by Lord Wavell that transportation is civilization. The extension of roads and road transport into the Indian villages would have a marked effect on the development of rural life, but these subjects were under the Constitution primarily Provincial and States subjects and the Centre could only co-ordinate and encourage.

In response to Mr. Malik, he paid tribute to the support always received from the Indian States, and said he felt confident that the railways would be ready to cater for the industrial development which was the policy of the Central Government as well as of the States.

His comparison of the efficiency of the British and Indian Government Departments referred to by Sir Leonard Wilson must not be misunderstood. In India decisions had frequently to be made on inadequate data, and with insufficient preparation, owing to the shortage of trained administrations, but, perhaps in consequence, quicker decisions seemed frequently to materialize.

He was interested in Mr. Higginson's remarks, corroborated the growth of claims on the railways, but took comfort from the fact that the British railways had also experienced parallel difficulties.

He expressed great appreciation of the kind remarks of the Chairman, Mr. Pope and other speakers, but said that the credit lay in the teamwork of all concerned. The human element in the operation of transport was of equal importance to mechanical efficiency. A decisive factor was that on the whole Indian railwaymen realized that they were fairly treated, and the credit for this must go to the Railway Board, under Sir Leonard Wilson, K.C.I.E., who had borne the burden of the day in the difficult years.

Sir JEREMY RAISMAN proposed a vote of thanks to Lord Pethick-Lawrence for presiding and to Sir Edward Benthall for his paper. At the present moment H.M. Government was faced with a large number of problems of unprecedented complexity, not the least of which was the problem connected with India, and the presence of the Secretary of State was all the more appreciated. He and Sir Edward Benthall had been friends for very many years; they were working together at a time when the most extraordinary changes were taking place both in general and in railway finances, and he was grateful to him for his co-operation and assistance. It was a happy result that the war left the Indian railways in a solvent condition.

The vote of thanks was accorded by applause, and in making a brief acknowledgment the CHAIRMAN said that the future of this country and of India and of the whole world depended upon one thing: whether the human race was capable of intelligent co-operation for life or whether by its quarrels and disagreements it was faced with death. Among the principal items of that co-operation was industrial co-operation, co-operation in transport of which they had been hearing that day. Sir Edward had spoken of a great chapter in the history of co-operation in transport, and he hoped that that lesson would be taken to heart in all the essential services of man to man in the days to come.

VICTORY RECEPTION

A Victory Reception was held by the Association on Tuesday, October 16, 1945, at the Imperial Institute, South Kensington, S.W. 7, to meet distinguished Service leaders of the South-East Asia Command, and also some of the rank and file of the Indian fighting services, including three Indian Army V.C.'s. The President of the Association, Sir FREDERICK SYKES, and Lady Sykes received the guests, numbering 400.

The PRESIDENT, in welcoming the special guests and those assembled to do honour to them, said that the East India Association had existed for nearly eighty years to promote the welfare of the inhabitants of India and Burma, so that it was fitting for the Council to decide to arrange a celebration of the victories of the South-East Asia Command, and to do honour to the outstanding leaders of that most severe and testing sphere of operations, and to convey to them the profound gratitude of the people of this country to the leaders and the vast numbers of soldiers, sailors, airmen and labour forces whose combined efforts drove the enemy *from* Burma in face of the most appalling difficulties.

The date of the reception was fixed to coincide with the presence of a number of leaders and Service chiefs in London, and one of the Army leaders was Sir George Giffard, who commanded the Allied land forces. It was hoped to welcome General Sir Mosley Mayne, but he was unwell and unable to attend. General Sir Mosley Mayne was G.O.C.-in-Chief of Eastern Command in India before coming to this country as Principal Staff Officer and Secretary of the Military Department of the India Office. Although he was unable to be present, Sir Frederick wished to record the great debt owed to him for all the work, assistance and advice he had given in making the arrangements for the function.

Other Army leaders invited were Lieut.-General Sir Montagu Stopford, who commanded the 33rd India Corps and later the 12th Army in Burma, and Lieut.-General Sir Henry Pownall, lately Chief of Staff to Lord Louis Mountbatten. Air operations were essential to victory, and he welcomed Air Marshal Sir William Coryton, who was commanding in Burma, and Air Marshal Sir Leslie Hollinghurst, lately commanding Base Air Force S.E. Asia.

For the Navy Admiral they welcomed Sir Geoffrey Layton, who was Commander-in-Chief in Ceylon and now Commander-in-Chief at Portsmouth, and Vice-Admiral Sir Algernon Willis, now Second Sea Lord, who commanded the Third Battle Squadron, and in 1942 was second in command of the Eastern Fleet.

Another outstanding contributor to victory by his devoted leadership in organizing India for and in the war, Lord Linlithgow, had written to express his great regret that an important engagement at York had prevented his being present. They agreed with the ex-Viceroy that this was "most unfortunate," but they welcomed Lady Linlithgow with special pleasure, and her son, Lord John Hope, who fought in the Mediterranean campaigns and now represented his native county in Parliament.

It was their privilege to have with them representatives of various ranks of the Indian Army which in the war occupied the proud position of being the largest volunteer army that the world had ever seen. All present would be glad to convey their sincere congratulations in person to three members of that Army who that morning went to Buckingham Palace to be invested by His Majesty the King with the Victoria Cross. All these Victoria Crosses were won by men in the Burma campaign. Time did not permit the recounting of the citations published in the *London Gazette*, but he would briefly mention Havildar Umrao Singh, 30th Indian Mountain Regiment, who was described as having "by his personal example and magnificent bravery set a supreme example of gallantry and devotion to duty," Rifleman Bhanbhagta Gurung, 3rd Gurkha Rifles, Indian Army, who showed "outstanding bravery and complete disregard of his own safety." Lastly it was stated of Naik Gian Singh, 4/15th Punjab Regiment, that "his magnificent gallantry, devotion to duty and leadership, although he was wounded, could not have been surpassed."

While doing honour to the fighting forces, the heavy responsibility which rested upon members of H.M. Government and of the Government of India who were more directly concerned with the Far Eastern war must not be forgotten, and therefore it was with great pleasure they had hoped to welcome Mr. and Mrs. L. S. Amery. During the long years of the war Mr. Amery carried unflinchingly the great burden and strain of the high office of Secretary of State for India and Burma. He welcomed with great pleasure Lord Pethick-Lawrence, the new Secretary of State for India, and Lady Pethick-Lawrence. This was the first of the Association's receptions which Lord Pethick-Lawrence had been able to attend, although he had already presided at one of the afternoon lectures, and the Association was grateful to him for the interest he took in its work. Lord Pethick-Lawrence would add a few words to the welcome offered to those whom the Association wished to honour and to those who had come to honour the South-East Asia Command.

Lord Pethick-Lawrence, who was warmly received, said that it was a very great pleasure to him to be able to be present and to take part in the proceedings. They were present to celebrate a victory, or, should he say, to remember the great campaign and to express thanks to those through whose exertions, courage and endurance it was brought to such a successful conclusion. In the years 1941 and 1942 our position was very different from what it became later. We were suffering disasters in every quarter of the globe, in Europe, in Africa, in the Mediterranean and in the Far East. At that time the idea was abroad that we were no match for the Japanese, particularly in jungle warfare. But the first glimmer of better things came in the great fighting retreat of General Alexander through Burma which enabled the withdrawal in safety of a substantial number of our troops to the barriers of North-East India. Forces were scanty, preparations were inadequate, and standing there he would like to pay his tribute to the late Prime Minister, Mr. Winston Churchill, and to the Chiefs of Staff, who throughout the war had to weigh the essential demands of the Eastern war against the vital necessities of the West. There had perhaps seldom been a greater display of the finer gifts of military judgment than in the allocation of our resources during those years.

Throughout this and the later stages of the campaign the Navy kept guard in the Indian Ocean. In 1943 the South-East Asia Command was constituted and placed under the inspiring leadership of Admiral Lord Louis Mountbatten, and in spite of many disappointments in matters of supply the new Command kept the Japanese under constant pressure. Here he would like to refer to that remarkable man, General Wingate, who conceived and put into practice the new tactics of infiltration with airborne support. The Chindit Expedition demonstrated new possibilities and gave back the confidence that British troops, rightly led and equipped, could beat the Japanese in the jungles.

Before final victory came the Japanese counter-offensive, which was defeated, on the frontiers of India, and from that time we never looked back until we reached Rangoon. General Stilwell's American-trained Chinese troops played an important part, but the master stroke was the landing from the air of large British forces which cut the Japanese forces in two, and which were maintained from the air for many weeks. This was arranged by General Wingate, who, unhappily, did not live to see success achieved. Tribute was due to the Americans in the air, to General Stilwell's Chinese forces; but the main brunt was borne by British and Indian troops and predominantly by the Indian Army, and Generals Slim, Stopford and others were worthy leaders operating in the later stages under the command of General Leese. Of the one million troops in the Burma campaign no fewer than 700,000 were Indians, and twenty of the thirty-one Victoria Crosses were won in the S.E.A.C. theatre. They were pleased to have three of these V.C.s with them that day.

Throughout the campaign the R.A.F. and the U.S. Air Force supported and supplied the Army, and in spite of appalling flying conditions established complete air superiority. He would like to say a word about the magnificent work of the medical services. In the early stages the sickness rates on the Burma front were so high that it was a most serious factor hampering any offensive action. Some of the areas on the N.E. Indian frontier were the most heavily infected in the world, but in course of time the doctors overcame these difficulties, and in the latter part of the campaign the health of the troops was remarkably good.

Another body of persons who should be mentioned were the prisoners of war and interned civilians who maintained the honour of our people in the presence of the enemy. We must also remember the benefits received from the vast American assault on Japan from the Pacific which weakened and undermined the Japanese in the East. There could seldom have been a greater change of scene than that which occurred in South-East Asia between 1942 and 1945, and we could now rejoice that peace had come.

Now we had to face all the difficulties of re-establishing and resettling the vast area in which the old order had endured for hundreds of years and which had been shaken to its foundations. Before the war new ideas were germinating in Asia, the East was changing every day and every hour, and it was our responsibility and pride that we in this country and other members of the United Nations should bring our imagination and our genius into play so that we could help and guide the people all over the world to recognize the greatness of the task of building the world in the days to come.

Admiral Sir GEOFFREY LAYTON said that now that the war with Japan was ended it was interesting to look back on its progress since December 8, 1941, when they launched their attack on Malaya, and carried on with their full flood of success until they had conquered the whole of their much coveted and talked of South-East Asia. They quickly ran through Malaya, Borneo, the Philippine Islands and the Dutch East Indies, and met no check whatever until they attacked Ceylon in April, 1942.

With the fall of Malaya and the Dutch East Indies the Navy had to fall back on Colombo and Trincomalee, which were our farthest eastern harbours which provided necessary facilities for our fleet to operate from, and there reconstruct our very much shattered naval forces in the East. The gravity of the situation was obvious. If we lost Ceylon we should be denied our life-line between the Middle East and Australia. We should have been denied the whole of the exports from India and from Ceylon, including the practically only remaining source of our crude rubber supplies, and, worse even than that, we should have had no harbours east of Africa from which to launch our ultimate offensive.

Ceylon at the time was to all intents and purposes unarmed, but thanks largely to the efforts of the Ceylonese, when the Japanese attacked in April, which was only about a month after we were able to commence building up our defences, we had advanced to such an extent that we were able to give the Japanese the first real rebuff they had so far received. They sent a powerful fleet to the Indian Ocean for this attack. Fortunately Admiral Sir James Somerville, with his very much inferior fleet, was able to avoid action, retiring to the west of the Maldive Islands, or we should have undoubtedly had still further disasters to record in the unfortunate chapter which terminated at that time.

Admiral Somerville retired to the east coast of Africa to reconstruct his fleet and remained there until the September of 1943, by when he was in a position to offer battle to any attack the Japanese were likely to launch, and he shifted his bases back from Kilindini to Trincomalee. In the meantime preparations for the offensive were rapidly progressed in the island. The South-East Asia Command under Admiral Lord Louis Mountbatten was set up and he moved his headquarters at the end of 1943 to Ceylon. From then on during 1944 we gradually took the offensive. The Fleet attacked Sabang, Palembang, Penang and the Nicobar and Andaman Islands. Our submarines carried out an active offensive in the Straits of Malacca and even farther east. The Pacific Fleet came into being also at the end of 1944 and set up its headquarters under Admiral Sir Bruce Fraser in Australia where, together with the United States Fleet, it joined the attack on the Japanese in the Pacific and, as a result of their combined relentless pressure, together with the East Indies Fleet under Admiral Sir Arthur Power, who had succeeded Admiral Somerville, operating on the western flank, the final collapse of Japan was brought about.

He took the opportunity of stressing the credit which was due to the people of Ceylon who, in the early days of 1942, practically unarmed, watched with trepidation the successive collapse of world-famed strongholds such as Hongkong, Singapore, Manila and the East Indies, collapsing like packs of cards under the Japanese attack. It was easy to imagine what their feelings must have been, knowing full well that they would be the next target upon which the full might of Japan would fall; but they buckled to, and the way in which they assisted and eventually, together with our own forces, succeeded in giving the Japanese their first real rebuff must go down in history to their eternal credit.

The work of our ships in the Far Eastern waters had not been easy. Many of them were not designed for tropical service. They had to carry far greater ships' companies than they were originally built for, owing to the introduction of radar, ack-ack and other modern developments of warfare. Mess-decks have been heated

EAST INDIA ASSOCIATION VICTORY RECEPTION

Lady S[illegible]k   Admiral Sir C. [illegible]   Lord Clifford by the middle of 1944 it was less than 3 per 1,000 per day. Since then further improvement had taken place.

Fighting the Jap was always a tough business because he did not surrender. Every single Jap had to be killed; the proportion of prisoners was very low.

What the Army succeeded in doing would never have been possible without the close co-operation, the assistance and help of the Royal Air Force and the United States Air Force. They supplied the troops with food, ammunition, petrol; everything that one could think of was flown to the troops and either dropped from the aircraft or delivered by landings on hastily prepared airfields. Nothing could have been done without this assistance from the air.

Owing to lack of landing craft it was not possible, until just before the end, to have close co-operation with the Navy, but whenever it was possible it was first-class. He would like to say a word of thanks to General Headquarters in India, under General Sir Claud Auchinleck, for the great support they gave. Whatever it was—reinforcements, equipment, it did not matter what he asked for—Sir Claud Auchinleck always seemed able to produce it.

What did the Army consist of? There were battalions from nearly every British regiment: there were Scotsmen, Englishmen, Welshmen, Irishmen, in every unit up and down the Army; there were West Africans and East Africans, and then there was the Indian Army itself, the backbone of all the fighting in Burma and that part of the world. The Indian Army was a truly magnificent Army; its regiments were recruited from races whose names have been household words for centuries, and all of them volunteered. It was the first time that Africans had ever fought outside their own continent, and they were all volunteers. The success of the Army was the best testimonial to its officers and men. Victory was won by the inspired leadership of the commanders, from the junior lance-corporal to Sir William Slim, by courage in battle, by steady endurance under conditions which were as bad as any in the world, by determination to defeat the enemy, by that spirit, which really made an Army, of co-operation between all arms and all services, and finally by discipline. The Secretary of State for War, after his return from the Far East, said: "Their self-control was wonderful, and perhaps the victory over themselves was not their least achievement. The self-control and the fine bearing of our men out there have increased my faith in the future of this country." He was speaking of British troops, but those words could be applied to the whole of the Army, which had distinguished itself by these great qualities.

Air Marshal Sir William Coryton said that there was no need for him to go back into the early history from the air point of view in the war in Burma. In the first two years it was rather a repetition of what one met elsewhere, unpreparedness and lack of resources, and it was better to pass to the middle of 1944 when the Air Force began to get not only adequate air equipment but also a proper technical standard. Not very much could be done without an adequate technical standard.

The real interest from the air point of view of the campaign had undoubtedly been the enormous use which had been made of air supply. Air supply was not a blessing which could always be supplied because a very great deal of hard fighting had to be done by the Air Forces before they could meet a heavy air supply commitment. To carry out this enormous task, which attained a peak figure of 3,000 tons a day flown to the Fourteenth Army, one had to make certain that one's opponent in the air was innocuous and that the air was clear, and he would therefore pay credit to the squadrons of heavy bombers and the medium bombers and fighters which enabled the transports to do their work.

Those squadrons were composed of American, Indian, British and Canadian squadrons. They had two main tasks; they had to clear the Japanese completely out of the air, and, secondly, they had to ensure the very maximum destruction on the Japanese lines of communication from Siam and from Rangoon to their forward area. Results show that they did the work magnificently. Another unique feature of the campaign from the air point of view was the intensity of the fighter bomber support which was given to the forward fighting troops of the Fourteenth Army. In spite of maintenance and supply difficulties these squadrons operated at a continuous rate of effort which had not been approached before. A glance at the map will show that with the existing land communications aircraft were, in fact, the most economical and almost the only method of producing for the Army the support and supplies which they required over such a large battle area.

Sir William Coryton wished to pay a very great tribute to the assistance received from the Army and from the Navy. The Army were responsible for producing the airfields and ground communications—no mean problem—and the Navy met all the enormous demands made upon it to enable the Air Forces to supply the Army.

SOME PROBLEMS OF FUTURE SECURITY IN THE INDIAN OCEAN AREA

By Lieut.-General G. N. Molesworth, c.s.i.

Now that both Germany and Japan have surrendered the world turns from the arduous task of making war to the stupendous task of ensuring world security. Unless security arrangements are 100 per cent. foolproof there can be no possible hope or guarantee of lasting peace, and all our sacrifices will go for nothing.

The task of ensuring peace has not been made any easier by the discovery of the means of releasing atomic energy. It is not a matter that can be kept secret; indeed, if it is to be used for the benefit of mankind it should not be kept secret. Control will not be easy. This scientific discovery has placed in the hands of mankind a vast instrument for good or ill, which may either revolutionize civilization or destroy it.

Thus we are today faced with problems which are no longer the exclusive concern of Governments, but affect each one of us individually. We have, each one of us, a vital responsibility for understanding the principles on which lasting peace can be based—for peace is the only future hope for civilization—for thinking continually about these principles and contributing our own small individual share to their practice and preservation.

Today I am only going to consider very tentatively a small portion of this question of future world security over a very limited field. My object is little more than " to start you thinking " on problems which lie before us in the immediate future, in an area in which this Association is particularly interested. I would, however, like to stress that, whatever arrangements may be made in the future, we have always the unknown factor of human nature before us. Occasions arise when human elements predominate, and no considerations of equity, economics, life and death, or common sense will prevent people breaking the peace, whether it be for considerations of greed or despair. It is when we are faced, as we may well be faced, with such a situation that world security will be really put to the test. Either it will succeed or civilization will collapse.

The Charter

Already some of our best brains are thinking deeply and much valuable preliminary work has been done at San Francisco. Public interest has been aroused and the Charter of the United Nations is before the world. It is not my intention to discuss this important and imposing document in any detail. But for my purpose today certain articles require brief mention.

Articles 1 and 2 set forth purposes and principles. These are briefly: firstly, to maintain international peace and security; and, secondly, to achieve international co-operation in economic, social, cultural and humanitarian questions.

Articles 23 to 54 deal with the establishment of the Security Council, which will have primary responsibility for the maintenance of peace and security. This is outside my field today. But Article 43 is of particular interest, for it deals with the contributions to be made by all members of the United Nations in the event of any threat to the peace. Such contributions include arrangements for the provision of armed forces, assistance, facilities and right of passage.

As I see it, the outstanding features of the whole document are, firstly, interdependence and co-operation between units on a world-wide basis; and, secondly, contribution by each unit, in some form, to the common cause. Perhaps the main factor in cementing the interdependent and co-operating units, and the underlying element in the Charter, is common funk. It is with the application of the elements of the Charter to India and its limitrophe countries that I am concerned today.

It is necessary to look back very briefly to some of India's security problems in the past. Defence has been, and will be in the future, closely related to constitutional, political, economic and social factors, in both the internal and external fields. It is no longer possible to consider defence in a professional, or even national, vacuum. It is closely linked with every facet of national and international life. Expenditure on defence in peace was the insurance premium which every country was prepared to pay in the hope—generally a slender one—that it would be an adequate guarantee against an aggressor. If civilization is to be preserved in the future that premium may have to be increased; those who can afford it will, in their own interests, have to contribute to aid those who can afford less. Parish-pump policy must take a back seat.

THE DEFENCE OF INDIA

During the period of British occupation—I need go no further back—India has never been able to stand on her own feet in matters of defence. The commitments for which she could accept financial responsibility have been governed by limitations of subcontinental size, vast land and sea frontiers, special racial and tribal factors, low standards of living and the difficulties of raising revenue, rather than the lack of actual resources.

At sea she has relied for security on the British taxpayer and the Pax Britannica, which is the gift of the Royal Navy. She has in recent years made a valuable contribution to her own local naval defence and the security of trade routes in the Indian Ocean. But that has literally been a drop in the ocean.

Within her boundaries her land forces have been sufficient to:

(*a*) Defend her major ports.
(*b*) Secure her internal strategic communications.
(*c*) Aid the civil power in an emergency.
(*d*) Maintain the *status quo* in tribal areas.
(*e*) Defend her frontiers against an aggressor.
(*f*) Provide a small general reserve.

Air forces have been a comparatively recent and valuable, though expensive, addition. At first responsibility fell on the Royal Air Force, but now India has her own Air Force, which will grow in efficiency and size—and cost.

There have also been forces available in those maintained by Indian States. These have maintained security within State confines, and of the strategic communications which pass through State territory. They have also made a great contribution to imperial and allied causes.

But India has never been called upon, unaided, to resist a major aggressor, either by sea, land or air. It has always been recognized that aid would be sent to her in such circumstances, and she was not called on to provide forces to meet this major emergency. During the two world wars she made a great contribution in men—apart from anything else—to theatres outside India. But the criterion, in peace and war, has been that any forces sent out of India should not be to the detriment of her own territorial security. The main picture is one of the acceptance of limited local responsibility, based on the capacity to discharge it.

INDIA AND HER NEIGHBOURS

India has in the past been fortunately situated for defence. Her geographical position, with no major power in close proximity by sea or land, has been her saviour. Natural obstacles of mountain, desert and forest have combined to render the defence of her enormous land frontier a reasonable commitment with limited resources. The traditional gateways on the west have always been vulnerable spots, whether the danger has come from central Asiatic hordes, tribal incursions, Tsarist Russia or Hitler in his drive to the Caucasus. To the east there has never been a threat, until Japan showed how closely Burma, though separated politically and geographically, is strategically joined to India. But what held for the past no longer holds for the future. Aircraft are only in their infancy, and to them physical land obstacles are little or no obstacles at all. Her vulnerability has increased by several hundred per cent. and is increasing.

By sea her enormous coastline is extremely vulnerable, as the Japanese have shown. Here her safety lies in keeping potential aggressors far from her waters.

Politically she is not so well placed. She is enclosed by nations which are constitutionally, economically or socially unstable. To the west lie Iran and Afghanistan; to the north-west Sinkiang, in which both Russia and China are interested; to the north are Nepal and Tibet, both undeveloped; to the east is Burma, with Siam beyond. Leaving Burma aside, none of these countries may, in itself, be likely to wish to disturb the peace. But indirectly, by reason of their instability and weakness, they are individually and collectively potential danger-points.

In general, the outlook for the countries bordering the Indian Ocean is not too rosy. Not only have modern developments complicated and increased their defence problems, but there are many other problems of interdependence and co-operation which are at present almost virgin soil.

SECURITY REGIONS

I now turn to the future. The San Francisco Charter has cleared the ground as regards principles, but there is much detail yet to be worked out. Beneath the umbrella of the World Security Council there will have to be local responsibility in regions yet to be defined. Such security regions or zones will contain interdependent units, who will co-operate and contribute primarily to the solution of their own security problems. But the regions themselves will, no doubt, be interlocked, one region helping another in an emergency.

We do not yet know how or where these regions will take shape, or how many there will be. But it is not unreasonable to suppose that India, by reason of her size, position, man power and resources—to say nothing of her aspirations—might be the major partner in a region lying between Africa and the Middle East on the one hand, and such regions as may be formed in the Far East and Pacific on the other. The other units with which she might be associated would be those in close proximity to the Indian Ocean.

In considering such a region, with India as its centre, economic, cultural and social factors must come into full account, as well as those of strategy. We can no longer think solely in terms of imperial commitments.

To the west there would be obvious objections to the inclusions of any portions of Africa, the Red Sea littoral or Saudi Arabia. With the possible exception of the Hadramaut they look elsewhere than to the Indian Ocean. Culturally, Iraq and Iran are more closely linked to the Middle East—particularly if we bear in mind the terms of the Saadabad Pact. But strategically Indian Ocean defence is very closely linked with the Basra Vilayet, the Persian Gulf, the Trucial Sheikhdoms, South Iran, and those parts of Eastern Iran through which runs the route from India to Meshed.

Afghanistan is in many ways linked to India, and her peoples are closely related to those on the Indian side of the Durand Line. Her outlet to the sea is through India. Nepal has close affinities to India, but Sinkiang and Tibet lie beyond the Himalayan wall and may perhaps be excluded. Affairs in both countries will, however, always be a concern to any Government in India.

Ceylon, Burma and Malaya, whose defence is closely bound up with that of India, are obvious candidates for inclusion. So also is the Netherlands East Indies, together with Borneo, Sarawak and Labuan. Siam and Indo-China are borderline cases. Culturally they have few connections with the peoples of the Indian Ocean. It may be that, weak as they are, they would fit more conveniently and appropriately into a Far Eastern Region.

THE LIMITS DEFINED

As a minimum, however, an Indian Ocean Region might well comprise the Persian Gulf and its littoral, Eastern Iran (possibly the whole of Iran for administrative convenience), Afghanistan, India, Nepal, Burma, Ceylon, Malaya, the Netherlands East Indies, Borneo, Sarawak and Labuan. This would give an adequate number of interdependent units, but not too many; a sufficiency of material resources and man power; and strategically an area which would not be too large for the rapid movement of reinforcements in an emergency. Strategically, also, it provides space for defence in depth and for the central location of reserves of material, production and forces.

It remains to be seen what contribution the units so grouped could make to their own and world security. It must be assumed that the first commitment of any unit would be its own internal stability. Beyond that, any surplus—and there will have to be a surplus—will go, firstly, towards regional and, secondly, world needs. This assumption, of course, rules out the "internationalizing" of all armed forces. Any such project, except for very special needs, or for special weapons, bristles with difficulties.

India, by reason of her location, size, resources and growing importance, would probably form the hard core of the organization. Her responsibilities would be directly commensurate with her capacity. Indirectly she might be asked to place facilities at the disposal of the World Council for the location and training of reserves raised, and paid for, outside India. In the material and industrial fields her contribution may be even greater than in the purely military field. It might well be that the directional and co-ordinating organism for the region would best be located in India. In the fields of culture and research she would doubtless contribute much.

The other units, with the exception of the Netherlands East Indies, have limited resources and would, at any rate at first, contribute more in the form of material and supplies than armed force. The Netherlands East Indies possessed considerable armed forces in the past. No doubt she would wish to re-establish and, perhaps, increase these. But what ever the resources of a unit may be, it seems essential that she should be expected to prepare some force which, in an emergency, could be made available for a common cause.

In considering the purely military side of the problem of contribution we must remember that the size, composition and armament of forces may undergo very considerable change in the future. New weapons and new methods of transportation may reduce the number of men required. But whatever the weapons produced and the method of their employment, men will be required to handle them. Moreover, men will for a very long time be the most suitable medium for the preservation of order, in circumstances not amounting to major war. India has always possessed men who, by tradition and nature, are well suited to handle weapons, and whose integrity can be relied on. She may for some years be asked to include them, in full measure, in her contribution.

CO-ORDINATION

But it is not on armed force that the main basis of security within a region will rest. Much will depend on the quality of the co-ordinated and co-operative planning and interchange of information between the interdependent units. I quote the Charter again, which enjoins "the solving of international problems of an economic, social, cultural or humanitarian character and promoting and encouraging respect for human rights and for fundamental freedoms for all, without distinctions as to race, sex, language or religion." Co-operation on these lines is the greatest guarantee for lasting peace.

It may be that the reaction of many of my listeners to what I have said may take the form of two questions. In the first place, what is the good of considering the theoretical problems of a small portion of the world security scheme, while the central structure is still in the melting pot?

It is a disturbing fact that the first conference of the Foreign Ministers of the United Nations has broken up without reaching any major decisions. This is, perhaps, not so surprising as it appears at first sight. The stark fact of the emergence from the fires of this war of a new Russia as a world Power, with very definite ideas on her place in the future Europe, has not yet had time to sink in. It is only natural that the ideas of a totalitarian State on how other States should be governed in a reorganized world should not coincide with those of the great western democracies. But, although the hitch which has occurred will cause unfortunate delay, there seems no reason why, after a period for thought, a *via media* will not be found.

There is also a disturbing element in the reactions of American opinion and Congress to the appeals put forward by the United States Service Chiefs for the post-war forces to be maintained. General Marshall has asked for a nucleus on which to be able to mobilize four million men within one year in an emergency. It seems unlikely that he will get this. If the United States go back on world security the outlook is a poor one.

There is also the unknown element of the atomic bomb. This may or may not be a bogey. On the one hand, the secret will not be easy to keep; on the other, we are told that cost may be the limiting factor. Whatever the truth, atomic energy may be the determining element in any plans for security and may revolutionize any preconceived ideas.

But in spite of these disturbing and somewhat unknown factors there is surely no harm in considering and ventilating ideas on both major and minor problems. There is much force in the contention of General Smuts that patience and friendly discussion will overcome present difficulties.

POLITICAL ASPIRATIONS

In the second place, what is the good of considering a world security region in which all the units are politically and militarily backward and undeveloped?

It is perfectly true that these terms can be applied to all the units I have suggested as those which might form part of an Indian Ocean Region. Iran and Afghanistan are constitutionally and economically unstable; militarily they are archaic. India is torn with disunity and communal feeling; but she has a sound military organization; an industrial system capable of much development; and Indian ideas have been broadened by the experience and responsibilities of war. Burma and Ceylon are poor, to a great extent defenceless, and politically inexperienced. Siam is dangerously weak in every department. Malaya has always had to rely on Britain for defence; her politics are extremely complex owing to her mixed population. In the Netherlands East Indies we now see a strong Indonesian reaction to European rule.

Throughout the region the war—and ideas of Japanese co-prosperity—have given a vast stimulus to popular aspirations and half-baked ideas of self-government and independence. We, as a democracy, have done much to sow and foster those ideas, so we cannot now complain. Indeed, it seems possible that many people in this country will have to revolutionize their own ideas on the future of Eastern peoples, and whole-heartedly accept the inevitable. It is surely the time not for repression, but for the wise direction of popular aspiration along sound channels, and for ensuring that progress to the ultimate goal is neither too rough nor too rapid.

If that view is taken it is surely necessary to begin to think out the problems at once, so that advances can be made beneath an umbrella of peace and constitutional progress go hand-in-hand with security. All of which, I am afraid, implies that for a very considerable period aid in one form or another will have to come from outside to ensure the security of the Indian Ocean Region.

In what I have put before you there is nothing new. The conception of an Indian Ocean defensive bloc has been considered in the past. It has, however, always foundered on the rocks of interdependence and co-operation—or, rather, independence and non-co-operation. Thus people like myself, and others of far greater eminence, have been regarded as dreamers and Utopians. But the dream has now got to come true. The world is face to face with stark facts. The dreams of independence and national isolation, in which many Eastern thinkers have been, and are, indulging, have been torn to shreds by the release of atomic energy. No one can afford now to allow others to be independent. We are all in the same boat and travelling over a stormy and unknown sea. Unless we all pull together we are bound for the rocks. There are plenty of rocks, some known, some unknown. We are all responsible for keeping a sharp look-out, not only to point out dangers which we may spot, but to ensure that those who are responsible do not steer a course which will bring us to destruction.

DISCUSSION ON THE FOREGOING PAPER

A MEETING of the East India Association was held at the Caxton Hall, Caxton Street, S.W. 1, on Tuesday, October 30, 1945, when Lieut.-General G. N. MOLESWORTH, C.S.I., read the foregoing paper. Lord HAILEY, G.C.S.I., G.C.M.G., G.C.I.E., presided.

The CHAIRMAN thought he need say little by way of introduction either of the lecturer or of the subject of the lecture. General Molesworth had high qualifications to speak on this subject, of which moreover he had made a special study. No one could doubt the importance of the question of defence, but in discussing it one was in somewhat of a dilemma. There were projects for an organization of the United Nations, which through its Security Council would supervise and supplement the efforts of individual nations for the provision of security and perhaps would entirely replace them. On the other hand, there were the undisclosed possibilities of the atomic bomb which might put war entirely out of court, or it might create a situation in which those very few nations which could manufacture it might dominate the whole world. In view of these undisclosed possibilities many thought that it was almost irrelevant to discuss questions of defence other than on a "global" scale. Was that really so? There were local problems of defence which could be discussed with some air of reality in the light of our experiences and knowledge of local factors. The problem of the defence of India was certainly one of them. It was a matter of supreme importance not only to India but to this country, because India was a focal point in our Imperial communications.

General Molesworth then read his paper.

Sir JEREMY RAISMAN said that he was very much indebted to General Molesworth for an extremely interesting and thought-provoking paper. The two factors which he emphasized, interdependence and co-operation, were the main factors in the problem both of regional security and world security. He had found himself constantly beset in the field of Indian activity during the war by problems arising from the absence of international co-operation, and now saw that the sort of problems which were always thought of as being confined to India and the British Empire were equally at home throughout the whole world. What had hitherto been seen was an India complaining of the disproportionate cost of defence, but the war came and India found that the cost of defence went up to figures which seemed fantastic. The total defence budget was multiplied about ten times, but in spite of that a situation arose in which the British taxpayer felt that he had been called upon to bear an undue burden in relation to the waging of the war in the territories contiguous to India.

There was the problem of the relation of America to the cost of the war, a problem which was now being worked out in Washington. Many present economic troubles were due to the fact that that problem had not been solved. It used to be said that finance would never stop a war, but at the present moment we all realized that the most serious aspect of war was its economic consequences. Finance could be ignored during the war, but it came back with terrific force at the end. The present position which we, America and India were facing, was due to the lack of any rational scheme of interdependence and co-operation in the maintenance of a common responsibility. America only came in at a certain stage when a tremendous amount of blood and treasure had been poured out and Britain had become impoverished. The ordinary Congressman thought that America's responsibility dated from her entry, and he could not be made to realize that he should make a further contribution because of the additional burden which Britain bore during the stage when she was defending civilization singlehanded.

How did this affect India? India from her own resources had provided an enormous part of the material for war. At the outbreak of war the largest professional Army in the British Empire was situated in and being maintained by India, and that had much to do with the outcome of the campaign in North Africa, which saw the beginning of the turning point of the whole war. But it did come back to the question of why should India have to provide so much from her own resources. Did it not throw some light on the old question of what was the proper function of India? Later on Allied armies swarmed into India, and the old idea that India should maintain the armies located within her own boundaries became completely meaningless. A country as poor as India could not be expected to maintain the armies needed for the waging of the world war, and it was a difficult matter to disentangle and define the various elements which should be determined in order to answer the problem. That brought him back to a fundamental consideration in these matters. A country could not expect to be interested in the maintenance of peace unless its standard of living was such that the people found it worth while to make sacrifices to maintain peace. A man could not be persuaded to undergo great sacrifices in time of peace as well as war if, broadly speaking, life was not very much worth living. A tolerable standard of living was an essential part in the realization of responsibility for a general scheme of defence and the maintenance of world peace. It was precisely because problems of that kind had not been worked out that the world was in the trouble it was in at the moment.

These problems were not incapable of rational treatment. In the domestic sphere they had been solved where it was realized that the maintenance of internal law and order was something for which everyone had to pay; but those who could afford more had to pay a great deal more, and in times of war the wealthier classes of the community were made to contribute an enormous share. Similarly, an international system of peace required a gradation of contribution of resources, not merely money, but real resources. Countries like India would be given a tolerable quota, and countries like America would have to bear a very much larger share than they had been used to thinking of in the years of isolation, or even in the years when they first began to realize that the Atlantic was no more a defence to them than the English Channel was to Great Britain.

Colonel E. W. SLAUGHTER, C.B.E. (Adviser to the Nizam's Government), said that Sir Jeremy Raisman had spoken of the cost of the Army in India, but that was a small financial problem compared with that now before India. He thought that the strategic plan put forward by General Molesworth was one which could only be coupled with a much larger one in dealing with the defence of India. There were five partners in the defence of that part of the world: India, Africa, Australia, New Zealand and the Far Eastern Colonies. He did not see how the smaller countries mentioned could possibly be relied upon even with co-operation and interdependence—so vitally stressed by General Molesworth—unless these five countries mentioned were of the same mind. They had faced two wars, and had endured great strain, and they would have to take a bigger view of the problems arising out of defence of the Indian Ocean. If they were not reliable partners in the Commonwealth of Nations we should have another failure. There must not be problems similar to those set us by Ireland. These members of the Commonwealth must be bound by a common purpose, and co-operate closely by both sea, air and land under one command.

Sir Jeremy Raisman had laid almost the whole financial burden on America; the General had suggested that India could not afford it. Who could? It must be proportionately borne, and it seemed to the speaker that, as Sir Jeremy Raisman had rightly said, it depended very much on the standard of living and national outlook of the peoples. Many of those present had played a small part in trying to raise the standard of living in India, and if more was done as was anticipated India would not be so dependent on the other members of the Commonwealth.

It was the wider and dependable co-operation that should be the basis of our strategic policy in that part of the world. General Molesworth's plan was too narrow, and in his view it must be broadened to include the co-operation of the other members of the Commonwealth mentioned, to make the defence measures secure. To do this all must plan for improved social and economic standards; only this would make the defence of these countries worth while.

Major WYATT, M.P., said that assuming India had achieved her political independence Britain would still be under some obligation for her defence. At the moment one of our most direct air routes passed over Rajputana, and if India had her political independence then our direct responsibility for her defence must shift to Indian hands and must rest with the Indian Army. At the moment the senior officers of the Indian Army were British, and that could not continue indefinitely. He would like to know how long General Molesworth thought it would take to train a sufficiency of Indian personnel to make the Army efficient. It was a big question and one which had to be thought out straightaway.

General MOLESWORTH said that it took officers like himself thirty to thirty-five years to grow. Indian officers were now being brought to the rank of Brigadier, but there were not many of them when one thought of the enormous size of the Indian Defence Forces. He thought that the complete Indianization of the Indian Army and the time it would take for India to stand on her own feet militarily, and, perhaps, politically and constitutionally, would be from now to thirty to sixty years, and it could not be any figure less than that. Progress must not be too slow or too rapid, and that was the crux of the matter. In the meantime, in some form or another, with British personnel wholeheartedly co-operating as they had always done, progress would continue.

If India got her own Constitution how would the defence of India and the question of resources, communications and other things work? He believed there would have to be a clear indication by the World Security Council of its requirements on the basis of the Charter. India was one of the finest training grounds in the world; there was plenty of room, infinite variety in the terrain and in the climate; in fact, everything which was required for the training of forces. He believed that there would have to be in India definite areas in which strategic air reserves, and possibly strategic land and naval reserves, would have to be allocated. It was nonsense for anyone to suggest that an independent India could be isolated, but that did not mean that Indians would not have as much freedom as the British.

Mr. Z. A. SULERI said that he was very much interested in the regional scheme of defence around the Indian Ocean, as outlined by General Molesworth, but was surprised to hear Sir Jermy Raisman say that the inducement to go to war was determined by a high standard of living. For it was hard for him to believe that Great Britain went to war to maintain her high standard of living. To his mind the only inducement to go to war was whether the ideology believed in by a people was worth preserving and worth fighting for. If Mussulmans in India were for fighting the Japanese, it was not so much for strategetic reasons as for the fact that the ideas the Japanese stood for were contrary to Islam.

General Molesworth was recommending his scheme of regional defence for the Indian Ocean area at a time when the question of partition was to the fore in India. Outwardly it might look as if Mussulmans could not appreciate the General's scheme of regional defence. Such an impression was erroneous. For let it be understood that the Muslim idea of Pakistan did not preclude Muslim association in any such scheme of defence. Muslim nationalism did not stand for isolation. On the contrary, Mussulmans stood for full-blooded co-operation with all the progressive countries of the world. That co-operation would be worth while only after the Mussulmans were assured that they would be free to live their own peculiar life, under the governance of ideas which they held most dear. All Mussulmans sought to preserve was their distinct way of life, a way of life which Britons could easily understand, inasmuch as they themselves had a distinct way of life, of which they were justly proud. The Muslim way of life could be preserved only in partition. Otherwise the Hindu majority was bound to affect it adversely. It was at points like these that to the Muslim mind fighting became the only way out of the difficulty. Assured of that way of life, Mussulmans were anxious to play their part in any regional scheme of defence. For them interdependence was the keystone to world security.

In summing up the CHAIRMAN recalled his preliminary observations regarding the relevance of discussion of problems of defence in spite of the fact that there was looming in the distance the possibility of a global security scheme. He felt justified in having made those observations by what General Molesworth had said regarding the way in which India could fit into the scheme of global defence and the contribution which she could make to it. General Molesworth had examined the question from two points of view, (1) the contribution which India herself could make, and (2) the possibility of her making an increased contribution in association with some of the adjoining countries as part of a regional scheme of defence. Everyone would agree that, viewed as a region, the associated nations to which he referred, headed by India, would from the point of view of global security constitute at present a somewhat weak combination. In view of their present social and political factors many of these nations would be written off at once. The Netherlands Indies might have a contribution to make, but the chief burden would undoubtedly fall on India.

India might have great industrial possibilities, but they were only now being organized on a large scale. The chief obstacle, however, to her capacity to contribute to a scheme of security lay in the low economic standards of the great mass of her population. He feared, moreover, that India, still in the mentality of dependence, would be liable to look to the sources of global defence, and fail to make of her own initiative sacrifices on a scale to which she had not been accustomed in the past.

The chief contribution which India could make to world security would not be so much on the material side for the immediate or approximate future, but in the improvement of her own internal conditions, thereby rendering her better able to take her part in the scheme of security and less liable to be a cause of possible friction in world affairs. As Sir Jeremy Raisman had reminded us, a people with low standards of living would lack the incentive to make a real contribution to world peace.

Everything that had been said that afternoon emphasized one point, that for many years India must be dependent on others. One might emphasize the principle of interdependence, and he should certainly do everything to foster the growth of the spirit of co-operation, but for many years India would be dependent for security on partnership in the Commonwealth and her association with the United Kingdom. She would have more to gain from this than from reliance on such assistance as she might obtain from other nations in the world.

Sir LANCELOT GRAHAM proposed a hearty vote of thanks to Lord Hailey for presiding, and to General Molesworth for his address, which was carried by applause.

INDIA'S FOOD PROBLEM

By Sir John Woodhead, K.C.S.I., C.I.E.

Introduction

The following recommendation is contained in the Report of the United Nations Conference on Food and Agriculture held at Hot Springs, Virginia, in the autumn of 1943:

> "(a) That the governments and authorities here represented immediately undertake the task of increasing the food resources and improving the diets of their peoples in accordance with the principles and objectives outlined in the findings of the Conference, and declare to their respective peoples and to other governments and authorities here represented their intention of so doing."

By that recommendation the representatives of forty-four Governments, including the Government of India, declared that their aim and purpose was to achieve freedom from want for all men. In my address to you this afternoon I shall endeavour to deal with some aspects of the problem of increasing the food supplies and improving the diet of the peoples of India. I have used the words "some aspects" intentionally, for the question of nutrition in India is a tremendous one, and for practical purposes is co-extensive with that of the whole future development of the country. One item of the terms of reference of the Famine Inquiry Commission appointed by the Government of India in 1944, of which I was Chairman, was "the possibility of improving the diet of the people and yield of food crops." My remarks today will be based upon our Report, which was published about two months ago.

The Present Nutrition Position

India today has a population of about 400 millions, and it has been estimated that about 30 per cent. of that enormous population does not get enough to eat; approximately three out of every ten suffer from under-nutrition. That, however, is not the whole story, for a still larger proportion suffers from malnutrition. In the case of this section of the community the diet, although adequate in quantity, is inadequate in quality; it is unbalanced. Cereals, rice, wheat and millets form the staple articles of Indian diets, but a diet composed largely of cereals does not contain enough of the nutrients required for health and needs to be supplemented by protective foods to make good its deficiencies in proteins, fat, vitamins, and mineral salts. These protective foods include pulses, vegetables, fruit, fish, meat, milk and eggs. The diet of large numbers, though it contains cereals in adequate quantities, lacks a sufficient amount of these protective foods, and it is these persons who suffer from malnutrition.

Further, a good and well-balanced diet costs more than a poor diet containing little else besides cereals. The protective foods are more expensive than the energy-yielding foods—cereals and tubers—and the poor man is forced, in order to satisfy hunger, to depend largely on the cheaper kinds of foods. This point may be illustrated in this way. Before the war it was reckoned that the cost of a well-balanced diet was about 20 rupees a month for a family containing the equivalent of four adult males, whereas that of an ill-balanced diet, sufficient in quantity but defective in quality, was about 10 rupees a month. On the assumption that the poor spend 60 per cent. of their income on food, an expenditure of 20 rupees a month on food would require an income of at least 30 rupees a month. The average monthly income of large sections of the population, urban and rural, before the war was below that level. These figures, approximate though they are, serve to indicate the gulf between possible and desirable expenditure on food. The lack of purchasing power is probably the most important cause of malnutrition.

POPULATION GROWTH

In a country in which the great majority of the people is dependent on agriculture and in which the population lives to a large extent on the food it grows itself, population growth and its bearing on food supply are matters of great importance. Between 1872, the date of the first census, and 1921 the rate of increase of India's population was not remarkably rapid, the increase during this period of fifty years being 20 per cent. This relatively slow rate of increase was due to high mortality from famine and disease. The position changed in 1921 and during the next twenty years India's population increased by over 25 per cent., an average annual increase of 1·25 per cent. as against 0·4 per cent. during the previous fifty years. The reason for this change is not far to seek. During the years 1921 to 1941 India was free from major famines, and there was no abnormal mortality from epidemic disease, such as that caused by plague and influenza during the previous twenty years. Again, though during this period the death-rate steadily declined, the birth-rate remained relatively constant with perhaps a slight tendency to fall. In British India the death-rate fell between 1920 and 1940 from 34 to 23 per thousand, while the birth-rate only fell from 37 to 34 per thousand.

India's population increased by 25 per cent. during the twenty years ending with 1941. What course is the curve of population growth likely to follow during the succeeding thirty years, say, up to 1970? That is a question which cannot be answered with certainty. Population forecasts, like many other forecasts, are apt to be falsified by events, particularly when satisfactory scientific data are lacking, but the broad conclusion seems to be justified that, in the absence of major calamities acting as checks in the Malthusian sense, the population of India will continue to grow at the present rate for several decades to come. Age composition is favourable to growth. Though decreasing, the death-rate is still high—about 23 per thousand—and the possibilities of reducing mortality by the development of health and medical services are tremendous. Schemes are now being drawn up for extending and improving these services, which, if they come to fruition, are likely to produce early results.

On the other hand, there are factors which may check the growth of population. The birth-rate fell sharply in the three years 1941, 1942 and 1943. For the ten years ending 1940 it was 34 per thousand, but by 1942 it had fallen to 29 and by 1943 to 26. This fall is important and, if continued, will strongly influence the future course of population growth. At present, however, the underlying causes are not fully understood, and if it should be due to family separation, resulting from enlistment and the growth of war industries, it is likely to be followed by a compensatory rise when normal conditions return. The growth of industry acts as a check on population growth, because normally it increases urbanization, and people living in towns and cities generally have fewer children than those living in rural areas. The declining birth-rate in the west has been associated with increasing urbanization, and it is reasonable to suppose that urbanization will have the same effect on reproduction in India as it has had in other countries of the world. The population of large cities in India increased by 7 millions (81 per cent.) during the decade 1931 to 1941, and it is possible that, with the advance in industrialization in the post-war years, the process will not only continue but will proceed at a faster rate. The loss of life in the Bengal famine was considerable; this will influence population growth in Bengal during the next few decades, but its immediate and later effects on the total population of India will probably not be great.

An analysis of all the factors concerned with population growth suggests that, in the absence of major calamities, the population of India will reach a figure of 500 millions in twenty or twenty-five years' time.

IS INDIA OVER-POPULATED?

Having regard to her vast population, the possibility that the population will increase by 100 millions in the next twenty or twenty-five years and the low standard of living of the mass of her people, the question naturally arises, Is India over-populated? That is a question, however, which cannot be answered by a simple

"Yes" or "No." Pressure of population, which, of course, varies in different parts of the country, is shown and felt in various ways. First, by the general trend of food imports and exports, India having within almost a generation become an importing rather than an exporting country. Secondly, by the decrease in the size of agricultural holdings, the fragmentation of such holdings, and the increase in the number of landless agricultural labourers, all related to the fact that the total area under cultivation has not increased as rapidly as population so that the *per capita* area has decreased. Finally, by the continuing poverty of the mass of the people and by the widespread existence of mal- and under-nutrition, in spite of the growth in total industrial and agricultural resources and in the total wealth of the country. In view of these facts we, on the Famine Inquiry Commission, came to the conclusion that in relation to the existing stage of development of her industrial and agricultural resources India is over-populated. We, however, laid emphasis on the words "in relation to the existing stage of development of her industrial and agricultural resources," and expressed the view that these resources, if vigorously developed, were such as not only to meet the needs of the growing population, but also to effect an improvement in the standards of living and nutrition. We emphasized strongly and repeatedly the magnitude of the task involved and its imperious necessity, and concluded with a warning in these words: "Either an effort must be made on a scale hitherto unthought of or a decline in standards of living and nutrition is inevitable."

INCREASE IN AGRICULTURAL PRODUCTION

During the last one hundred years Governments in India have accepted the duty of preventing widespread death from famine. The further obligation must now be accepted of taking every possible step not only to prevent starvation, but also to improve nutrition and create a healthy and vigorous population. The State should recognize, as a broad principle, its ultimate responsibility to provide enough food for all, and all the resources of Government must be brought to bear in order to achieve that end. The yield of food crops, the basic cereals and the protective foods must be increased to the greatest possible extent. The technological possibilities of increasing agricultural production are great. Dr. Burns, who was for some years Agricultural Commissioner with the Government of India, in his monograph on "Technological Possibilities of Agricultural Development in India (1944)," estimates that the yield of rice can be increased by 30 per cent.—20 per cent. by manures, 5 per cent. by improved varieties and 5 per cent. by protecting from pests and diseases. Indeed, he considers that there would be no difficulty in increasing the yield by 50 per cent.—40 per cent. by manuring and 10 per cent. by improved varieties. According to the same authority potential increases in the yield of millets and wheat are of the order of 25 to 30 per cent. The present average yield of sugar-cane is about 15 tons per acre. Dr. Burns considers it possible to produce yields of 30 to 55 tons per acre according to the part of India. It must, however, be emphasized that these are technological possibilities, illustrating what might be achieved by thoroughly efficient agricultural methods. They are not immediate possibilities for the vast majority of the small farmers of India, and will not be fully achieved without a tremendous effort on the part of the Governments in India and of the people themselves. It is impossible, within the limits of a short address, to deal with all the steps that must be taken to step up agricultural production, and I must content myself by referring briefly to the main lines of attack. I fear they contain little really new. They have all, except one, been advocated at one time or another, and in particular by the Royal Commission on Agriculture. The provision of an assured and regular water supply is a most potent—perhaps the most potent—means of increasing agricultural production. Irrigation canals, multipurpose reservoirs, tube wells, river pumping, open wells, tanks, private irrigation works in permanently settled estates, and the conservation of rain water by contour bunding must all be developed to the utmost extent. Next to the provision of an assured water supply, the use of manures offers the most important single means of increasing the yield of crops. Hitherto the use of manures has been largely confined to the more profitable among the cash crops, and the amount applied to land on which the main crops are grown has been very small. It is essential that the use of organic and inorganic manures should be greatly extended. Every source of fertilizing material must be utilized to the fullest extent, the supply and distribution of manures must be so managed as to ensure that they are available in all parts of the country at the cheapest possible rates, cultivators must be educated in their use, and Agricultural Departments must be in a position to give advice as to the quantity and the manner in which they should be applied. Work on the breeding of better varieties of crops must not only continue but be greatly expanded, and larger quantities of improved seed must be made available to the cultivator. Protection against pests and diseases is an important factor in increasing production; improved measures of control must be investigated and applied. Large areas in certain Provinces are infested with deep-rooted weeds. The loss in production due to these weeds is enormous; the land which is most affected remains uncultivated, and in the less-infested areas the out-turn is greatly reduced. Work on the eradication of these weeds through deep ploughing by tractors has been undertaken, and one hopes that it will prove successful. Malaria, the most common and most debilitating disease in rural India, not only seriously affects the efficiency of the cultivator, but also prevents large areas of fertile land from being cultivated. A most vigorous attack on urban and rural malaria should be launched now that the war is over. Measures for the improvement of livestock must be continued and intensified, and the experiments into the possibility of the application of methods of mixed farming should be continued and extended. And last, but not by any means the least important, the administrative and field establishments of the Agricultural Departments must be very considerably expanded. There is undoubtedly great scope for increasing agricultural production in India. But the increase necessary to feed the growing population on a satisfactory standard of nutrition will not be achieved without a tremendous effort. It is imperative that the effort should be made.

Food Policy : Cereals

The Famine Inquiry Commission outlined a food policy for the future, and I will now indicate the main points we sought to make. Cereals are the basic food of the people of India, and the Commission recommended that self-sufficiency in cereals should be one of the cardinal aims of food and agricultural policy. In putting forward this proposal it was not, however, recommended that the producer should be compelled to grow cereals in preference to other food and non-food crops. It was not considered necessary or desirable that an uneconomical diversion of cultivation from non-cereal to cereal crops should be compulsorily effected for the purpose of achieving self-sufficiency in cereals. The main cereals are rice, wheat and millets. Before the war India was self-supporting in wheat and millets at the prevailing rate of intake; there was a small export of wheat of about 200,000 tons a year. Irrigation is the most important means of increasing wheat production, and it is mainly to the development of irrigation that one must look for the increased supplies to meet future requirements. The two principal millets, jowar and bajra, are grown in areas of comparatively low rainfall. Here also large increases in yield can be obtained by irrigation, but, generally speaking, millets are grown in areas in which irrigation is difficult and is likely to remain difficult. Reliance, therefore, will have to be placed mainly on, first, dry farming methods, which include contour bunding for the conservation of rainfall, and, secondly, manuring. According to Dr. Burns an increase of the order of 20 per cent. is possible by the application of dry farming methods and the use of fertilizers. As regard rice, the position is less favourable, for before the war India was not self-sufficient in this cereal, annual imports being about 1¾ million tons. If India is to be self-supporting in rice by, say, 1960, production will have to be increased by about one-third, or, roughly, by about 8 million tons. Can this increase be achieved? Large-scale irrigation schemes in Madras, Sind, and Bengal can make a very substantial contribution towards future requirements, and it may be possible by anti-malaria measures to increase considerably the area under rice in Madras and the United Provinces. But it is clear that the major part of the increase will have to come from increased yields from land already under rice cultivation. Rice yields, as I have said, can be increased by 30 per cent.—20 per cent. by manure and 10 per cent. by improved varieties and protection from pests and diseases. The possibilities of increasing supplies of rice to the extent necessary to make India self-sufficient in that cereal must, therefore, largely depend on a large increase in the supply and use of manures. The quantities of manures and fertilizers required are, however, enormous and well illustrate the tremendous and untiring efforts which will have to be made to expand agricultural out-turn.

CERTAIN HIGH-YIELDING CROPS

The potato and sweet potato both occupy a prominent position in world food economy. As a world source of food energy, the potato is not far behind rice and wheat, and its cultivation is of particular importance in the more densely populated European countries. The sweet potato is a root of great importance in many of the warmer countries of the world. Both potatoes and sweet potatoes give a larger return of food energy per unit area than cereals, and are of value where, as in India, the pressure of population on land makes it essential that the most profitable use should be made of land. The extended cultivation of potatoes and sweet potatoes should, therefore, be one of the objects of food policy. This, however, is subject to a qualification. These foods, particularly the sweet potato, are deficient in proteins, and if they are taken as the main ingredient in the diet, protein intake is seriously reduced. The aim, therefore, should be to increase the production of these two foods simultaneously with that of other foods, such as cereals, pulses, fish, etc., which are richer in protein, in such a manner that they form part of a diet otherwise containing a sufficiency of protein. Tapioca is another high-yielding crop, but it is a very poor source of protein, and in normal times the growing of tapioca should only be encouraged if it is possible to ensure that it does not become the chief ingredient in the diet, and that other foods richer in protein are consumed in sufficient quantities.

PROTECTIVE AND SUPPLEMENTARY FOODS

The consumption of protective and supplementary foods is quite inadequate. Pulses, vegetables and fruit are important protective foods and a large increase in their supply is perfectly feasible. Milk is the best of all supplements to cereal diets, and an increase in its consumption is urgently needed. But looking at the matter realistically there appears to be no immediate possibility of increasing milk production to such an extent that milk can become a regular article of diet consumed in adequate quantities by the poorer classes in the greater part of India, and the Commission reluctantly came to the conclusion that the ideal of half a pint of milk daily for every child is not a practical objective attainable within the next few decades. Every effort must, however, be made to increase the supplies of milk; the more milk the better. The other protective food to which I would draw attention is fish. In a country such as India, where the *per capita* intake of meat and milk is very small, fish has a special importance as a supplement to ill-balanced cereal diets and must be given a prominent position in food policy. Unfortunately Indian fisheries are for the greater part in a lamentable state, and it is most important that vigorous steps should be taken to develop them. In many parts of the country fish should form the main protective food of animal origin in the diet of the masses.

AGRICULTURAL PRICES

One fact clearly emerges from a study of agricultural economy in its various aspects during the decade preceding the war: it is the fundamental importance of the maintenance of agricultural prices at a level which will give a reasonable return to the producer. Any repetition of the agricultural slump of the thirties would be disastrous to India and might bring progress to a standstill. A fair return to the cultivator is one of the foundations not only of agricultural prosperity but of general prosperity also. Authorities all over the world are agreed on the need of assuring the cultivator of a fair price for his produce, and at the United Nations Conference on Food and Agriculture in 1943 a recommendation was adopted in regard to the action required on the international plane. The Famine Inquiry Commission laid strong emphasis on this aspect of food policy. They stressed the importance of the prices of food crops, as compared with other agricultural prices, in the economy of the country, and emphasized the importance of the prices of wheat and rice in comparison with those of other cereal and non-cereal crops. They expressed the view that the hard core of the problem of stabilization of agricultural prices is the stabilization of wheat and rice prices, and recommended that a policy of stabilizing these prices at levels fair to the producer and the consumer should be adopted irrespective of any action in respect of other commodities.

THE ORGANIZATION OF AGRICULTURE

The possibilities of developing agricultural production in India are great. Government can and must assist in their realization, but in the last resort it is the people, the millions engaged in agriculture, who, by their individual and co-operative efforts, must ensure the increase in agricultural production on which the welfare of the community so largely depends. Are they capable of the effort which is necessary? Have they the necessary resources? These are questions of great importance, linked as they are with the thorny problems of land tenure, rural credit and unemployment and co-operation. I cannot do more today than just mention these problems, but their solution where they stand in the way of increased food production is a vital aspect of food policy.

INDUSTRIAL DEVELOPMENT

Improvement in diet and a rise in the standard of living are nearly equivalent objectives. In order to increase agricultural production and improve the national diet, simultaneous industrial development to augment the total wealth of the country is essential. Industrialization will not by itself solve India's economic problems, but the growth of industry will materially help to solve some of the most thorny problems of village economy, such as excessive population pressure on land, rural unemployment, etc. Extensive plans for the development of industry are under preparation, and one hopes they will be brought to fruition.

FAMILY LIMITATION

In conclusion, may I say a few words on family limitation or birth-control. That is one of the many difficult questions on which that omnibus body, the Famine Inquiry Commission, felt compelled to express an opinion. I cannot do better than quote certain relevant passages from the Report:

"There are signs that among the upper and professional classes generally the birth-rate is falling. . . . The significant fact is that the first beginnings of the process (birth-control) which in its fully developed stages has strongly influenced the curve of population growth in the West are discernible in India. . . . At the present time, in our opinion, a deliberate state policy with the objective of encouraging the practice of birth-control among the masses of the population (*e.g.*, by the free distribution of contraceptive devices) is impracticable. For religious reasons public opinion is not prepared to accept such a policy. . . . Further, the low economic condition of the poorer classes and their lack of education, together with the factor of expense, seem to make the widespread encouragement of birth-control a practical impossibility. . . . There is, however, no reason why the state should not take other steps, through the medium of health services, which will have the effect of encouraging family limitation. Knowledge of birth-control could be imparted through maternity and child-welfare centres, by women doctors, to women whose health would be endangered by further or excessive child-bearing, and also to women who seek advice because of a reasonable desire to 'space' their children. The satisfactory 'spacing' of children, to ensure that each child will be born healthy and can receive adequate maternal attention, is a legitimate and desirable public health objective."

The problem of securing an adequate diet for the people of India, covering as it does the whole field of agricultural and industrial development, is a gigantic one. While it would be wrong to underestimate in any way its magnitude, it would be equally wrong to approach it in a spirit of pessimism. To do so would only end in catastrophe. The solution lies in the vigorous development of India's agricultural and industrial resources by the united efforts, on a scale hitherto unthought of, of the Government and the people of the country.

DISCUSSION ON THE FOREGOING PAPER

A MEETING of the Association was held at the Caxton Hall, Westminster, on Wednesday, November 14, 1945, when Sir John Woodhead, K.C.S.I., C.I.E., Chairman of the Council, gave an address on "India's Food Problem." The Lord SCARBROUGH, G.C.S.I., G.C.I.E., presided.

The CHAIRMAN said that Sir John did not need any introduction to members of the East India Association, for he was Chairman of the Council, an office which he had held for nearly six years. Neither did he need introduction to those who were not members, because his work in India and Bengal in particular was well known, especially his recent chairmanship of the Famine Inquiry Commission. Regarding the subject of the paper, there was no question affecting India, not even the great Constitutional questions, of greater gravity than the problem of food supply, and Sir John was perhaps better qualified than most to survey this vital issue.

Sir JOHN WOODHEAD then read his paper.

The CHAIRMAN, in thanking the speaker for setting out so clearly and comprehensively the nature of this problem, said that it was one which had come much to the front in war-time, but only recently had the underlying causes been widely appreciated.

During the past few years there had arisen what had appeared to be abnormal conditions from the cessation of imports from Burma and other handicaps caused by transport difficulties in and to India owing to the war, but it was not appreciated that it was anything more than a war-time problem. It could now be seen to be due in part to the great increase in population which had been taking place for some time. Steps had been taken for some generations to increase food production in India, such as the irrigation schemes and the introduction of better varieties of crops, but this improvement in food production evidently did not keep pace with the rapid increase in population.

If India was to be able to provide for her people on the scale desired, gigantic efforts would be necessary on the part of the Government and people. This called for co-operation between the people and the Government, however that might be constituted, and for changes in the habits and practice of the people themselves. He did not at all despair of a good response, and would give two instances as examples of co-operation. During the war it had become necessary to introduce rationing in India, starting in Bombay in 1943. There were doubts as to whether it would work, yet during the past two and a half years the arrangements had worked smoothly on the whole, because the inhabitants of the city of Bombay and those others whom it later affected, realized that not only the Government but they themselves would suffer if the scheme broke down.

As another instance showing that Indian cultivators would co-operate for their own good, he quoted the case of the district of Bijapur. In the last few years efforts had been made to ease the problem of the poor rainfall by contour bunding. Here, too, there had been doubts at first, and an Act was passed to bring in compulsorily those who might refuse to co-operate in the necessary schemes. There had, he understood, been no need to make use of those compulsory powers. Latest information suggested that the yield of crops might increase 30 per cent. on those lands on which the work had been carried out.

Gigantic as the problem of India's food supply was, he agreed with the lecturer that there was no need to view it with pessimism.

Sir ATUL CHATTERJEE desired at the outset on behalf of the Association and its Council to welcome back to London Sir John Woodhead, the Chairman of the Council, who had been much missed during his absence, but they had the satisfaction that Sir John had in a comparatively short time accomplished the great task.

along with other members of his commission, of setting forth in full detail not only all that had gone amiss when the last Bengal famine occurred, but had also surveyed in a masterly manner the entire agricultural and economic situation of India and had made most valuable recommendations for the betterment of conditions there. He had had the privilege of reading the whole of the Famine Commission's Report, and he had been impressed by the way in which all branches of the subject had been dealt with. He regretted the difficulty of obtaining a copy of this document in this country. Sir Atul ventured to agree with practically everything the Commission had suggested except on one small point.

Sir John Woodhead's Commission had set before India the ambition of securing self-sufficiency in the matter of cereals, but the speaker would like to see something more than that, because India was always liable to natural disasters such as a failure of the monsoon, unsatisfactory distribution of the rainfall, and damage by cyclone or flood, and more than enough should be grown in favourable seasons to offset these possibilities in a bad season. The Government of India had always resisted proposals to put any export duties on wheat because they considered it was desirable to encourage people to grow more than they needed in a good year.

As Sir John had said, in the old days the Government of India strove to prevent starvation; in future it must have the still nobler task not only of preventing starvation but also of providing a diet better in quality and quantity. To get people to grow the necessary food a great propaganda drive would have to be undertaken, and this was perhaps a more important and immediate task than the solving of the Constitutional problems facing India. He hoped that the recommendations of the Famine Commission would be translated into every Indian language and published and broadcast throughout the land. The recommendations should be embodied in textbooks used in the schools. It was not only the Government but the people who must co-operate in the great new aim.

Sir ALBERT HOWARD (late Imperial Economic Botanist to the Government of India) declared that a scheme to provide the cultivators of India with artificial manures would soon prove one of the greatest disasters which had befallen the country. The effect of artificial fertilizers such as sulphate of ammonia would be to upset the balance of soil fertility by setting in motion oxidation processes which would burn up the vital store of soil humus. Increased crops would be obtained for a few years, but at what a cost—lowered soil fertility, lowered production, inferior quality, diseases of crops, of animals, and of the population, and finally diseases of the soil itself, as well as soil erosion and a desert of alkali land.

" No further investigations and practical trials are needed to establish the fact that the yield and nutritional value of the Indian rice crop can be increased by at least 30 per cent. in a very few years. All that is necessary is to set in motion an active and enthusiastic programme of work in the villages under the leadership of the local notables. It is only necessary to create examples of what could be done and encourage the landlords to follow the pilot schemes. A vast increase in the number of bureaucrats will be unnecessary."

The yield of rice depended on the fullest possible use of the soil fungi which formed the living bridge between the soil and the roots of the plant. This natural association was the means provided by Nature for ensuring the circulation of protein between soil and sap. The amount of humus in the rice nurseries and rice fields must be increased. The vegetable matter was already contributed by the water hyacinth, the animal matter by cows, oxen, and buffaloes. The preliminary work of converting these mixed vegetable and animal wastes into humus was done some years ago in the grounds of Government House, Barrackpore, by Mr. E. F. Watson, O.B.E., superintendent of the Governor's estates, and there had already been large-scale application of this work.

The effect of additional humus on the rice crop was first demonstrated in India in 1932 by one of the missionaries—the late Mrs. Kerr—at Dichpali, Hyderabad. A generous dressing trebled the crop and improved its quality. What had already been done could be copied all over the Continent, once it was realized that the water hyacinth was not a pest to be destroyed but a gift of Providence.

A most important step in improving the quality of the rice grain would be the giving up of the milling of rice, the grain being used instead in its natural state Solution of the rice problem in India then involved two things conversion of a common water weed into humus, and the prevention of the murder of the resulting grain

Dr Hamied The facts and figures as given by the lecturer are absolutely correct I have nothing to add to the picture which he has given you on the food problem in India What, however, he has not mentioned, or avoided to mention—and very few people go into it—are the causes of the appalling food situation in India today Agricultural methods in India are as primitive as they were perhaps 2,000 years ago There is no regular training of the agriculturists in modern methods of agriculture They are carrying on today the growing, collecting and harvesting of their produce by the most primitive methods known to mankind, methods which have been handed down from father to son It is a tragedy that, in spite of the Imperial Council of Agricultural Reserve which was started about twenty three years ago, and in spite of the immense amount of public money which has been spent by Government on Agricultural Departments, no advance has been made in improving the conditions of agriculture in the country You will be surprised to know that the yield of rice in India per acre is 800 lbs, whereas in Japan it is 3,000, in Egypt 2,500 and in Spain 5,000 lbs per acre Who is responsible for this poor crop in India? You may say the Government of India, or the people of India are responsible I say that it is not correct to throw the blame on others Are you ruling India or are you not? If you are ruling India—as you are doing—then the ultimate responsibility for the primitive conditions in that country rests ultimately on you What is the Government of India? Is it not supervised and controlled by you? Hence the responsibility lies on you

I am saying all this as a friend of your country, because if conditions are bad in India, India suffers, and you and your country must suffer too

Another cause for this downward trend in agricultural production is the taxation of agricultural income The tax on agriculture, generally known as Land Revenue, is fixed in India in advance for thirty years It is based on a calculation of the yield per acre of crops It does not take into consideration the loss in crop due to the lack of rainfall or any other cause Famine or no famine, the landlord must pay the Government the fixed tax on his land He naturally collects from the agriculturist, who ultimately is the sufferer In some parts the agriculturists pay direct to the Government, and here, also, whether it is loss or profit—which is whether the crop is good or bad—the agriculturist must pay the amount of revenue which has been fixed for years in advance Is that, I ask, an equitable system of taxation? In industry, if a company makes loss in any year no income tax is levied from that company Why should it not be so in agriculture? I ask Sir Jeremy Raisman, whom I see sitting here, whether he will justify this policy of agricultural taxation for which he was responsible during his term of office as Finance Member in India

Sir John Woodhead has attributed the famine to a great extent to the increase in the population of India, and he advises that birth control should be enforced I beg to differ from him India is large enough to hold double its present population and to feed a still larger population provided the methods of agriculture are modern and scientific We are already facing various types of control, such as sugar control, food control, clothes control—why introduce birth control?

To me it appears that nobody is prepared to take the blame for the present primitive state of agriculture in India The Indians think, and perhaps rightly, that the cause of this is inefficiency of the Department of Agriculture of the Government of India, and as the Government of India and the Government of the United Kingdom are ultimately connected the ultimate responsibility falls on Britain The problem to me does not appear as difficult as Sir John has described I last week visited the Rothamsted Experimental Station at Harpenden I asked Dr Crowther, the Director in charge, as to how he put his results of successful experiments into actual practice Dr Crowther said that they had a large number of trained workers who go from field to field, from county to county, and explain the methods of scientific manuring to the farmer—sometimes he agrees, and, if he does not, they show him on the spot by actual farming the results of using fertilizers. The Government Agricultural Department have their organizations for this purpose in every village, and by this means the agriculturists in England are today producing almost 60 per cent. of their requirements in food, whereas some years ago they could hardly produce more than 30 per cent. Why can we not in India adopt this system and send trained workers from village to village? I think that the British Government should see that the same methods as are applied in England should be immediately applied by the Indian Government for increasing agricultural production.

If India is well fed England is also well fed. If India is strong and rich then England can consider herself to be strong and rich. The individual members of the body give strength and energy to the whole and make it healthy and strong.

I would recommend you to consider the problem of uplifting India both agriculturally and industrially to her full share in the comity of nations, and thus cease to think in terms of India and England alone.

Mr. N. A. McKenna doubted whether there was in the world today a more pressing food problem from the long-term point of view than that of ensuring adequate nutrition and health for the peoples of India. He would, however, like to consider this problem as it would present itself within the next ten years.

The population of all India was now about 400 millions. At the present rate of increase (generally agreed to be between 5 and 6 millions a year), it would, in the absence of any major epidemic such as followed the 1914-18 war or other calamity, reach 450 millions within ten years. The present production and consumption of food grains was approximately 60 million tons a year, and an overall increase of 10 per cent. on present consumption alone was required to bring the standard of nutrition to an adequate level. In ten years, therefore, India would require over and above present consumption a further 7½ million tons of food grain per annum to cater for the additional population, and nearly 7 million tons per annum to bring cereal consumption up to adequacy—say a further 15 million tons per annum by 1955. Sir John had set out, as did the Royal Commission on Agriculture, the technological methods necessary to meet this target. But how were these to be put across to every village and every cultivator? What organization could be established now, over the vast areas under cultivation, to give results on the scale demanded within ten years?

That was the crux of the problem. There was no time to engage on long-term research programmes or to make extensive soil surveys and so on, which would require large numbers of trained men and could not yield results for some years. Attention should be directed first and foremost to three or four simple things which the cultivator could be taught and convinced of the benefit of doing—the use of manures and fertilizers, the improvement of water supplies and the control of crop diseases and malaria. These should be worked into a demonstration, training and distributive organization covering the whole of the areas where results would follow most quickly. Without some such scheme, essentially simple yet covering perhaps 100 million acres of land, India would be faced with an even graver position in ten years' time than she was faced with now. But if improved methods of cultivation were pushed ahead and use was made of what was known today, and a simple practical plan evolved which could be worked, it should be possible to "deliver the goods."

Mr. H. S. L. Polak said the population of India increased by about 630 births per hour so that consideration must be given as to what was to be done to satisfy that population. Among other matters there was the question of the destruction of manure which could otherwise be used for fertilization. How could this unnecessary destruction be avoided? By increasing fuel production and distribution and by a better education of the masses of the people by means of the travelling cinema and the radio.

The question of emigration, referred to in the Woodhead Commission's report, had been omitted from the paper, and he wondered whether that was because of lack of time or whether it was deliberate, because it was a very weak pin upon which to rely. The Dominions would never accept Indian immigrants in any numbers, many parts of the Empire were already over-populated and under-nourished, and he would like to hear what Sir John Woodhead had to say on that point.

Mr. **Brander** said the Royal Commission on Indian Agriculture stated that no possible economic improvements could cope with India's great population growth. A typical case is Java, where, coincident with great scientific agricultural development, population has increased from 5 to 45 millions in the past 150 years, but the standard of living has failed to rise. Sir John had quoted Dr. Burns' estimates of greatly increased crop productivity. But Dr. Burns in a recent lecture admitted that India's population growth, now over 5 millions a year, was far in excess of possible food increase. Penicillin and the new cheap malaria drug would lower the death-rate and increase population growth still more. The Famine Inquiry Commission's proposals failed to meet these hard facts. All backward peasant populations increased up to the margin of subsistence. There would be no escape from mass undernutrition and repeated famines until, like the nations of Western Europe, Indians by education and public health instruction developed the desire to limit their families and learn the methods of doing so.

Sir **John Woodhead**, in replying to the discussion, said that he was not an expert agriculturist, and therefore hesitated to give an opinion on the relative merits of organic and inorganic manures, but it was generally agreed that manures must be applied in a balanced form—there was danger in the indiscriminate use of chemical fertilizers. As he had said, the officers of the Agricultural Departments must be in a position to advise as regards the manner in which and the quantity in which manures should be applied.

As regards the present policy of limiting the degree to which rice is milled, the Famine Inquiry Commission had expressed the view that it was justified. It should, however, be remembered that in the case of parboiled rice the effect on nutritive value of under-milling was not very striking, and that a large proportion of the rice-eating population consumed parboiled rice. It was in the case of machine-milled raw rice that under-milling was of definite benefit.

Dr. Hamied had spoken of the backward and old-fashioned methods followed by the agriculturist in India. There is undoubtedly great scope for the introduction of improved methods, but the peasant farmer is not such a fool as he is sometimes represented to be. It is true that he is conservative, but the small peasant proprietor cannot afford to take risks; his margin is too small. When it was proved to him that it was to his advantage to alter his ways he had done so. He had willingly adopted improved varieties of sugar-cane and also of jute. It would be a great step forward if he could be provided with a substitute fuel for cow-dung, so that he could apply the farmyard manure to the land instead of putting it on the hearth. But this change would not be effected unless he was provided with an alternative cheap form of fuel.

Sir John said he had not referred to emigration because the Famine Commission saw little hope of large-scale emigration being possible at present. What the Commission said was that they looked forward to the time when Indians would be welcomed in the under-developed areas of the Empire as colonists and not as indentured labourers.

He thought Mr. Brander was a pessimist. Nothing would be gained by approaching India's food problem in a spirit of pessimism. It was true that ultimately a decrease in the rate of population growth was not only desirable but necessary, for the developments in food production had their limits. The birth-rate would have to decrease, but it was not practicable to effect an immediate decrease.

Sir **John Hubback** thanked the lecturer for his address, and expressed surprise that in the discussion no one had taken up his point about giving a guaranteed fair price to the agriculturist for his produce, although this was a very essential point. Prices were controlled at present, but the control so far was aimed at keeping prices down. Arrangements had yet to be worked out for keeping prices up.

THE ANGLO-INDIAN COMMUNITY IN THE NEW INDIA

By Frank R. Anthony, M.L.A. (Central)

It is almost impossible for anyone who has not spent some considerable time in India to gain even a remote idea of the bewildering complexities of the Indian problem. I would like, first of all, to make my position clear. I am the leader of one of the recognized minorities in India, but my education, training and profession have combined to make me not only a Liberal but a Nationalist. I defer to no one in my love for India and in my fervent desire to see her reach the goal of unity and self-government.

But I am also a realist. I deeply regret that India today is in the throes of the most bitter sectarianism. I am not going to attempt to point a finger at any leaders or parties or to apportion blame. Communalism in India springs from the widespread feeling of distrust among the numerically smaller communities. Until this distrust is effaced communalism will grow in strength and intensity. As long as different sections in India believe that the principle of a common nationality exists only on the lips and not in the hearts of those who purport to lead India, so long will the different sections of India insist, and I believe quite reasonably, that their rights and interests should be specifically recognized and, if necessary, specifically safeguarded.

I have a steadfast faith in the part the Anglo-Indian community can and will play in the future of India. More than any other community, perhaps, we are free from caste prejudices and inhibitions. More than any other community, perhaps, we are able to accept all Indians equally and at their real worth. We do not judge people by their caste or communal position. We look to our community to play a vital part in supplying the leaven of Liberalism to the social, economic and political developments of the future.

The very proud history of our community has been little publicized or proclaimed. It is not known as it should be even in our own country. The average Britisher and even the British official in India is ignorant of it. Our tradition, our culture and our sense of discipline have made us, perhaps, the greatest stabilizing factor from the point of view of the Administration. Our service to the Administration in the past has been misunderstood by some of the other peoples of India. But this steadfastness and stability will be one of the greatest assets in the future of the country. As in the past, we shall lend our services to stabilize whatever Government is in charge in India.

Who is an Anglo-Indian?

Even the best friends of the community are mistaken as to who an Anglo-Indian is. In England, the man-in-the-street would, perhaps, conjure up a vision conditioned by ignorance and popular prejudice—a vision inspired by the figment of some cheap novelist. Even the British official in India often has a vague and imperfect idea as to the proper definition of an Anglo-Indian. The recent confused recruitment by the Army authorities is illustrative of this. The term "Anglo-Indian" was legally defined for the first time in the Government of India Act of 1935. Under the definition all persons of European descent in the male line whose parents are habitually resident in India are Anglo-Indians. Thus the community includes those who have not any admixture of Indian blood but who are born in India of parents habitually resident there. The touchstone of this definition is the habitual residence of the parents. For example, a British soldier marries an English girl and then settles in India. If his children are born in India they are Anglo-Indians.

And this is as it should be, for the definition protects the interests of the children. A domiciled European is not a statutory native of India and as such cannot claim the right to employment in India. His children being, legally, Anglo-Indians (who are statutory natives of India) have the statutory right to such employment. Furthermore, whether white, brown or black, we all belong to the same community. We have the same economic, cultural and political problems. The Britisher who settles in India almost invariably marries an Anglo-Indian girl. We intermarry irrespective of gradations of colour. Contrary to the figment circulated by the sensation-mongering novelist, the community marries within its own limits. For generations there has been no intermarriage with other communities in India. Many of the better placed Anglo-Indians, who come to England for higher studies or on leave, have married and continue to marry British women.

The Anglo-Indian community is today, in fact, about half a million strong. The official census figures, concerning the community, are notoriously inaccurate. The community is one of the definite minorities, and we have certain inalienable rights as an important racial minority. While some may argue that the Scheduled Castes, for instance, are inseparable from the Hindu community and do not satisfy the definition of a minority, no such argument can be applied to us. In the words of the late Sir Campbell Rhodes, "the Anglo-Indian race, which has distinct racial characteristics of its own, is one of the few that can claim the possession of an Indian birthright."

The directors of the East India Company felt the need for establishing, as they called it, a Domiciled community in India, on which they could rely to fill strategic appointments and services. With this object in view the directors avowedly encouraged the marriage of British officers and soldiers to the women of India. These marriages were even subsidized. As a result of this policy the Anglo-Indian community was brought into existence. These unions were by no means confined to the middle and lower classes. Many marriages took place between the most distinguished Indian and European families. To mention only a few of some of the famous founders of the community: Job Charnock, the builder of Calcutta, married a Hindu. One of his daughters married Sir Eyre Coote, one of the most brilliant and spectacular figures of Clive's time. General Sir Hugh Wheeler, of Cawnpore fame, had an Indian wife. The House of the Earl of Duffus has descendants in the community, who are still proud of the family name of Sutherland. Major Hyder Young Hearsey founded the famous Anglo-Indian family of Hearseys. Gardner, nephew of the first Lord Gardner and founder of the famous Gardner's Horse, married a daughter of the Nawab of Cambay. Sir or Rajah George Thomas, Colonel Sir Michael Filose, and many others, followed what was almost a marital usage of the time. The half-brother of Field Marshal Earl Roberts had an Indian mother.

A Serious Setback

Up to 1791 the Anglo-Indian community was perhaps the most wealthy and influential in India. Its members filled the highest posts in the civil and military administrations. There was no discrimination either social, economic or racial. Suddenly misfortune came owing to a change in policy of the East India Company. In 1791 the Mulattos in Haiti rose and almost exterminated the European settlers. Fearful of any similar possibility, the East India Company determined in 1791 that no Anglo-Indian should be admitted to their covenanted services. They deprived Anglo-Indian officers of their commissions. In 1795 the Company went further and decreed that Anglo-Indians were only eligible for non-combatant ranks. The loyal and distinguished services of the community were forgotten overnight.

The position was, if possible, to deteriorate. Lord Valentia was sent out by the East India Company to report on conditions in India. Ignorant of the traditions of loyalty and service and with the fear of the Haiti uprising fresh in his mind, he reported after a short visit that our increasing wealth and numbers constituted a menace to British supremacy in India. In 1808 an order was issued discharging Anglo-Indians from British regiments in India. In future, to be an Anglo-Indian was to be earmarked for subordinate service. Thereafter, a dense impregnable wall of social and economic segregation was drawn around the Anglo-Indian. However outstanding in character and ability, he was doomed to be a lifelong subordinate. Some escaped by claiming to be Europeans. Often they achieved wealth and distinction. A premium was thus placed on renegadism.

SERVICES TO BRITAIN

The dark days of the Indian Mutiny saw the Anglo-Indians rally to the hard-beset cause of Britain. No rancour for past neglect or bargaining of the market-place ever entered into the part they played.

In the 1914-18 war about 80 per cent. of the available able-bodied men of the community were in the armed forces of the Crown. They served with distinction in every theatre of war. The credit of the achievements of many of them was lost to us, as we could only secure admission to the Army as Europeans. Specific mention may be made of certain outstanding examples of Anglo-Indian heroism: Flight-Lieut. Lief Robinson, V.C., of the Royal Flying Corps, brought down the first Zeppelin to be destroyed over England, and Flight-Lieut. Warneford, V.C., also of the Royal Flying Corps, accounted for the first Zeppelin over France. In addition to the V.C., Warneford was awarded the Croix de Guerre. Major Demonte won the M.C. in France and Peters the D.C.M. in South Africa. As always, the three strategic and vital services of the Railways, the Posts and Telegraphs, and the Customs, owed their stability to their Anglo-Indian personnel.

The Indian Defence Force deserves a special, if brief, reference. This Force, now known as the Auxiliary Force, was and is drawn preponderantly from my community. It is India's second line of defence. Its yeoman service to the State has been crucial. In the first Great War, when Britain was fighting with her back to the wall and when India was completely denuded of British troops, the Indian Defence Force represented for two years the military personnel on which the Government could and did rely for maintaining law and order in the country. But the post-war period brought unemployment and disillusionment. Anglo-Indians who had given up everything in order to fight came back to receive cold and indifferent treatment by the Government. Many unemployed ex-soldiers, wearing their decorations, were to be found walking the streets, bitter and disillusioned. That tragically recurring Government complex, of welcoming the community's vital services in times of stress and then casting them off like a weapon, trusty but no longer needed, was once again shown.

THE SECOND WORLD WAR

In the war so lately ended, as in its predecessor, no less than 80 per cent. of the available man-power joined the different armed forces. We claim that on a numerical basis we have contributed more to the war effort than any other community, not only in India but in the Commonwealth. There are hundreds of Anglo-Indian officers in the Indian Army, Royal Indian Navy and the Royal Indian Air Force. Illustrative of the extent to which members of the community have joined the Air Force is a recent passing-out parade. The Sword of Honour was won by an Anglo-Indian. Of the fifteen young men awarded their wings, eleven were Anglo-Indians.

It should not be forgotten that in addition to our contribution to the Indian Services thousands of Anglo-Indians have joined the British Forces. Many of them were fighting with the British Army in the epic Dunkirk evacuation. It is reliably estimated that between 3,000 and 4,000 Anglo-Indians were serving with the Royal Air Force during the Battle of Britain. Many of them won outstanding awards. We have reason to believe that at least two of the V.C.s were awarded to members of the community. Dyson, D.S.O., D.F.C. and bar, the grandson of a former leader of the community, holds the record for the largest number of planes shot down in single aerial combat. He accounted for six Italian planes in fifteen minutes during operations in the Middle East. Daniell was first awarded the D.F.M. and then the D.F.C. Parker, D.F.C., of Moradabad, and Lieut.-Commander Douglas, D.F.C., of the Fleet Air Arm, are two more of the many members of the community in the Royal Air Force decorated for gallantry. Other awards, such as the M.C., D.C.M. and M.M., have been won by a number of Anglo-Indians.

The heroism, sufferings and sacrifices of the Anglo-Indians in Burma deserve to be recorded amongst the greatest epics of the war. No official publicity has been given, such as that accorded to Burma Hill tribesmen and others, to the gallantry of the community in Burma. But one or two persons who know the truth, including a military correspondent, have written of the Anglo-Indians as among the real heroes of Burma.

The contribution of Anglo-Indian women to the war effort is without comparison in India. It is worthy of very special note and consideration that Anglo-Indian women have contributed more to the war effort than other communities in India put together. About 70 per cent. of the Women's Auxiliary Corps, the Indian Military Nursing Service and the Auxiliary Nursing Service was drawn from my community.

But for the ready and complete response of the Anglo-Indian railwaymen, the Indian Railways would not have stood up to the unprecedented strain suddenly imposed on them by the vast war effort. If the inside story with regard to the Posts and Telegraphs is revealed, the same vital contribution by my community will be found.

The Sapru Committee's Support

There has been a welcome change of attitude towards the community on the part of Indian leaders and other sections of the people. Strong proof of this change of attitude was given in the recent report of the Sapru Conciliation Committee, which consisted of eminent Indians. This Committee recognized and accepted the rights and needs of the Anglo-Indian community. The main proposals concerning us, adopted by the Committee, were as follows:

1. The right of the community to a seat in the Central Cabinet of the Indian Union.
2. Representation in the Central Legislature on the basis laid down in the Government of India Act, 1935.
3. Recognition of the disservice done to the community by the general formula for a Constituent Assembly, as set out in the Cripps proposals. Under that formula the Anglo-Indian community was not assured of even a single seat. The Sapru Committee agreed that we should have at least two seats in a Constitution-making body formed under the Cripps scheme.
4. Endorsement of the need to continue the financial assistance to Anglo-Indian education, as guaranteed to us under Section 83 of the Government of India Act, 1935.
5. Adoption of a resolution by which the community's quotas of service and the remuneration attaching to these services, as secured by Section 242 of the Act, were not to be affected.

It should be borne in mind that the Conciliation Committee Report was welcomed by the majority of communities and parties in India, including the Congress.

The Simla Conference

The non-inclusion of a representative of the community in the Simla Conference was a bitter and unexpected blow. His Majesty's Government owed us an inescapable duty in this matter. If it had been laid down not only that the community should be represented at such a Conference, but should also have a seat on the Executive Council, I am certain that not a single community or leader would have raised any demur. But so far from trying to repay, partially, their immense debt to the Anglo-Indian community, His Majesty's Government denied us what the Indian leaders were prepared to grant. By being excluded from the Conference we were denied the elementary right and opportunity of placing our case before the other communities and leaders. We sincerely trust that such treatment will never be repeated.

Rights and Needs

His Majesty's Government and the Government of India owe us the duty to ensure our adequate representation in any Constitution-making body. It is imperative that our case be pleaded with the maximum of knowledge, ability and persuasion before a Constituent Assembly. The Sapru Committee recognized that we should have at least two representatives in a body convened under the Cripps formula. But our case is that the proportion of representation granted to us in the Central Legislature under the 1935 Act be maintained for the purpose of representation in a Constitution-making body. Thereby we have four seats in the Central Legislature, the Sikhs six and the Christians eight.

Hitherto the community has not had a seat on the Viceroy's Executive Council. Our right to a seat has been recognized even by the Indian leaders, and, as I have shown, was accepted by the Sapru Conciliation Committee. Our claim is more than justified by our record of past and continuing services to the country to which I have referred. We are the only cent.-per-cent. literate community in India. We form, in fact, 10 per cent. of the educated section of India. The whole economy of the community is tied up with and dependent on the Central Administration.

There is an unfortunate tendency for the numerical yardstick to be applied, with mechanical precision, in according political representation to the different communities. But, as the Muslim League has always maintained, the principle of a "numerical democracy" cannot be applied to India. Political theory and practice justify our recognition on the basis of our service to the State. It can be said, without qualification, that not only relatively but absolutely we have done and continue to do more for the State than some of the numerically larger communities represented in the Central Executive.

We are anxious about the prospects of demobilized Anglo-Indian soldiers. Between 20,000 and 40,000 Anglo-Indians will require to be reabsorbed into civilian life. We look to the Government and the military authorities to see that conditions are established which represent some recognition of our proud record and which will enable us to maintain the economic standards to which we have been accustomed.

It is hoped that the Government of India will see its way to maintain at least two regiments of Anglo-Indians for use in occupied territory.

The community has taken its place in the stream of Indian national life. We have declared our policy to support all legitimate nationalist aspirations. Our education and our sense of discipline should be invaluable assets to the Administration, whoever happens to hold the reins of Government. At this critical period in Indo-British relations, if proper use is made of the community, we can be of untold value both to Britain and India. We are of British stock and culture, and so understand the British as no other community in India can. We are also of Indian stock and so understand our fellow-Indians as no Britisher can. Allowed to play our proper rôle, we can be the tried and highly tempered link between India and Britain.

DISCUSSION ON THE FOREGOING PAPER

A MEETING of the Association was held at the Caxton Hall, Caxton Street, S.W. 1, on Monday, November 26, 1945, with the BISHOP OF ST. ALBANS (the Right Rev. P. H. Loyd) presiding, when Mr. Frank R. Anthony, M.L.A. (Central), gave an address on "The Anglo-Indian Community in the New India."

The CHAIRMAN said that it was a pleasure to preside at a meeting at which the case of a community to which so much was owed was to be stated, and the main purpose of the meeting was to express appreciation for the most important part which that community had played during the last century in India. Mr. Frank Anthony was the President of the Anglo-Indian Domiciliary and European Association for all India and Burma. He read a telegram of good wishes to the meeting received from Mr. Edward Palmer, of the well-known Hyderabad family.

The CHAIRMAN wished there had been more time for Mr. Anthony to enlarge upon what the Anglo-Indian community stood for in the history of India, what it had done and what its potentialities were. He would like to give his personal testimony to the community. In 1925 he was consecrated Assistant Bishop of Bombay to work up a new diocese and was put in charge of two areas, the Ahmednagar and Aurangabad. When the new diocese was opened in 1929 he had to choose where he should live, and asked that Nasik should be included, and never ceased to thank God that he did so, because there he found a community of Anglo-Indians who gave him every help and interest. When he left fifteen years later the diocese was properly organized, the Diocesan Council being far more effective than many English Councils. A most valuable element in it was the Anglo-Indians, people who came from the railway communities and press communities, who naturally took their part in the life of an Indian diocese. When he started work there were 14,000 Indian Christians in the area with 2,000 Anglo-Indian Christians, and when he left there were 23,000 Indian Christians and about the same number of Anglo-Indians, the business being conducted partly in English and partly in Marathi. Everybody recognized that the Anglo-Indian with his ready understanding both of the British and Indian points of view made a valuable contribution to the life of the diocese, and it gave the speaker a new insight into the powers for adaptation and sympathy within that community.

About twelve miles from his house there was an Anglo-Indian school, a very fine one, the Barnes Schools at Deolali. He got more and more to love and value the community, and it seemed quite natural to hear Mr. Anthony saying how they were becoming accepted by the leaders of Indian national life, and it was obvious that they could make a very valuable contribution to the life of India. Whatever was done about the Anglo-Indian community in India the best influences were recognizing its value.

He had been in places such as railway workshops where Anglo-Indians were in charge of a department where they showed the British sense of fair play and a painstaking understanding and sympathy with the young men learning their trade. That element in India must be developed; it was in India's interests that it should be given power to develop. One way of doing this was by backing up the Anglo-Indian high schools. The Government realized the value of these schools, and was not withdrawing the grants in spite of the Nationalists. Anything which could be done through the Indian Church Aid Association here, through scholarships, so that the boys and girls received the education which they needed, should be done.

Sir **Geoffrey Clarke** (I.C.S. retired, and late president of London Chamber of Commerce) said that Mr. Anthony mentioned the particular service with which he himself was connected in India, the Telegraph Service, but he did not mention the Post Office, which employed about 120,000 during his time, and the backbone of the Post Office was the Anglo-Indian community. A balance had to be drawn between the different communities and castes, but the man who could keep the balance was the Anglo-Indian postmaster. The difficulties of keeping a post office going, in which many of the people could not read, and where letters were addressed in a dozen different languages, were colossal. The Telegraph Service was very largely an Anglo-Indian service, and the great advantage was that if expeditions were undertaken the service was asked to supply the telegraph personnel, and that personnel could always be relied upon.

He was very impressed by what Mr. Anthony said, that in using the word "democracy" we were inclined to count it numerically. Eighty-five per cent. of the people of India were absolutely illiterate, and the Anglo-Indian community was an educated community; its schools were excellent, run on English public-school lines, and they produced a very good class of boy. The community was doing a great deal for India, and they could act as a great stabilizing influence. He would like to support what the Chairman had said, that they should do their best to see that the community received fair play and a voice in the Legislature and a seat on the Executive Council, so that the welfare of a very valuable community could be promoted.

Sir **Ness Wadia** said that he not only supported Mr. Anthony in the franchise which he claimed, but would suggest that he took a bolder line. He had been connected with Anglo-Indian schools, and was governor of a girls' school at Khandala. He thought that the rising generation, properly educated, could bring forward another generation which would take its place intelligently in the India of the future.

He took a very hopeful view of the future of the Anglo-Indians, wherever they might be placed. They had been working in the telegraphs, post office, and railways, but they were wanted in higher posts; they were needed to take an intelligent interest in holding the Indian population together and to form a nucleus in that respect, and he hoped Mr. Anthony would succeed in his aims.

Sir STANLEY REED, M.P., said that there were three points in Mr. Anthony's paper on which he would like to comment. One was with regard to the great Anglo-Indian names which flitted across the history of India. Only one of those families he believed was really in being to this day, the Skinners, with their home near Delhi. He believed the Filose family, so long associated with Gwalior, had become almost extinguished. Everyone who had lived in India and known members of the Anglo-Indian community as friends and colleagues would welcome the vigorous exposition of their case by Mr. Anthony. If it had not been for the fatal blunder after the paroxysm of Haiti Indian politics might be a far easier problem to solve than it was today. He would support Mr. Anthony in his demand for a place in the Indian Constitution-making body on the ground of their high percentage of literacy, the part they had played in India, and their service to the stability of the country.

The second point was with regard to the schools which, as had been said, were excellent; the third, the demobilization of the Anglo-Indians who had served in the war. They had a very raw deal after the last war, where some of them, particularly in Mesopotamia, did excellent work. Every effort should be made to see that in the demobilization programme their services are adequately recognized, and that they have every possibility of re-establishment in civilian life.

Bishop EYRE CHATTERTON said he was glad to think that when Mr. Anthony arrived in this country he was one of the first with whom he got into contact, for he was glad to welcome him and do what he could for him. His own interest in the Anglo-Indian community went back to the year 1892, the very first days he spent in India as head of the Dublin University Mission. When he was made Bishop of Nagpur in 1903 he had a great deal to do with them. In many cases they had no churches, and during his episcopate a number of little churches were built for them along the railway tracts.

The European schools in India gave a very good education, and for that reason in connection with Bishop Foss Westcott and other Indian Bishops and through the kindness of Archbishop Lord Lang an appeal for them was launched in England. Unfortunately the war intervened, and only £30,000 was raised. He felt that there was abysmal ignorance of the Anglo-Indian community, but whatever happened the European schools should be maintained at the highest possible standard.

When he was leaving India the Bishop of Calcutta, knowing his interest in the community, wished him to undertake the presidency of the Indian Church Aid Association and it, with the European Schools in India Association, started with Sir Robert Laidlaw's splendid gift, was doing valuable work in aiding the Anglo-Indian and European Domiciled community. If these schools could produce men like Mr. Anthony they were really worth while. He hoped his mission would be very successful, and that he would go back feeling he had friends behind him.

Dr. RANJEE SHAHANI said that, although he was an Indian, he was a friend of the Anglo-Indians, and in 1939, long before Mr. Anthony thought of putting forward his people's claims, he devoted a long and appreciative chapter to them in one of his books. His only grumble with Mr. Anthony was that he had spoilt his own case: first, he had given a list of grievances and a list of war services—a tiresome combination; and then he had sent his appeal to the wrong address. The British could help the Anglo-Indians only temporarily: their fundamental problem was that they had to decide once and for all whether they were Indians, British or pseudo-British. He himself was educated in a school where he met a lot of Anglo-Indians; some of them were very bad: they thought they saw a god when they met an Englishman, and their attitude to Indians was not what it should be. They learned better manners when they were stepped on. However, the goal of the Anglo-Indian community should be to merge itself with the people: to ask for special privileges was to invite their own doom. The Anglo-Indians must stand on their own feet and compete on equal terms with the best Indians. He would refer Mr. Anthony to a very interesting article in the last number of the *Hibbert Journal* about Eurasia: it would broaden his vision: it would show him that a new world was coming into being. There were millions of people with mixed ancestry: the future of the world lay in the union of East and West: and the Anglo-Indian must strive towards that by first being Indian. The supreme folly was to be without roots.

Lieut.-Colonel E. J. S. **Trotter** said that he was very interested to hear that the Chairman was in Ahmednagar, because that was his first station. He as a subaltern knew the then Bishop of Bombay very slightly and thought he was one of the best. With regard to Mr. Anthony's very fine statement, he knew Colonel Gidney and had great respect for him, and he knew his views on the Anglo-Indian question. With regard to what Mr. Anthony had said about the Anglo-Indian community, he would write to his Member of Parliament and try to do what he could.

Dr. O. H. K. **Spate** said that this was the first meeting of the Association he had attended, and he was glad that the subject should be one about which he had thought a great deal. He served in the unit to which Mr. Anthony referred; it had a very fine record, and anyone who served in that forgotten first Burma campaign could not speak too highly about what the Anglo-Burmans did, particularly on the railways and telegraphs. Their whole world was crumbling to pieces, but they kept to their posts in a most magnificent way.

He was interested to hear about the earlier work of the community; one always heard that the Portuguese wrecked their position by the very policy which the East India Company originally adopted, and he would like to know where a fully stated and documented account of the early history could be found.

Did Mr. Anthony really think that whatever the legal and constitutional guarantees his community obtained it could, looking more than twenty years ahead, continue to hold its position simply on those grounds? Although he agreed that the community owed its position not to favouritism, it could not continue to hold a position on the ground that the British were, or had been, behind them. Was it not essential for the community to create its own position in the job it could do in the technical services, and could not the Anglo-Indian schools contribute more to the technical side of education than they had up to now? There would be tremendous scope in this field if any of the planning schemes were carried out; was it not in that direction that the community should look for its future?

Mr. G. St. G. **Higginson**, speaking from the point of view of a railway officer and a commanding officer of an Auxiliary Force Battalion in India, said that it had been his experience that the services which Mr. Anthony mentioned had found the Anglo-Indian community their absolute backbone. Whenever there was a labour dispute, which always contained an element of political dispute and involved the other communities in strikes, the Anglo-Indian community could be depended on to carry on. The Auxiliary Force, whose other ranks were almost entirely Anglo-Indian, could be relied on, and never more so than three years ago, when the whole of the communications of India were threatened, and possible complete sabotage might have altered the conduct of the war in the Far East. He had no doubt that his own battalion at the time of speaking was again giving military aid to the civil power around Calcutta, and he would like to support everything Mr. Anthony had said about the good citizenship of the Anglo-Indians. Good citizenship was the best argument for asking for political representation in government.

He would give one word of warning. He did not think the average Anglo-Indian, as represented in railways and other Government services, was prepared for the future social and economic life of India. He did not think that many Anglo-Indians of the type he knew best (the railwaymen) educated their sons to a standard higher than that which would enable them to start life as ticket collectors; these grades would have to wake up and realize that comparatively higher rates of pay would have to be earned and, if earned, would have to be spent on the education of their sons, so that they could compete for better jobs in a market very much more competitive in the future than in the past.

He gave Mr. Anthony his best wishes in his task.

Mr. J. P. Brander asked Mr. Anthony what was his attitude and that of his community to Dominion status, supposing it was acquired by India. Had they taken into account the fact that when Dominion status was given to any country it could alter its Constitution entirely and take away all the rights given to any minority? He recalled the example of South Africa, which as soon as it was given Dominion status took away the Parliamentary franchise from the Africans in Cape Province and from the Indians in Natal. It might be said that the Church would protect the Anglo-Indian community, but he did not think that would be effective.

Mr. Anthony, in reply to the discussion, said that the request was not for privileges, neither was his community asking for representation on a mere counting of heads, but it was important that they should have representation based on their civic importance to the country, their literacy and the fact of their continuing contributions to the State in order to maintain and strengthen their economic position. If the community did not have political representation it was conceivable and more than probable that their economic position would be increasingly encroached upon. Technical education was one of the points on which he was working. A commission had been set up to survey Anglo-Indian education, and one of its objects was to study the bifurcation of such education. The community was not only urban, but had an industrial and technical aptitude, and he hoped to see it bifurcated in the middle school.

He was aware that many parents took their children away from school after the primary stage of education. It was comparatively easy for a child to get into the lower cadre without a high degree of educational qualifications, but this tendency was disappearing; more anglo-Indians were going in for education than any other community in India, and he believed the schools had a vital contribution to make not only to the life of the community but to India generally. They were far and away better than anything any other community had to offer; this was admitted by Congress Ministers who sent their own children to Anglo-Indian schools, not only because of the higher educational standards, but also because of the sense of discipline and the capacity for leadership engendered by the schools.

With regard to his attitude to Dominion status, it was right that any community in India should take its place in the general stream of life. The community supported the position that India should reach the stage of self-government. He did not think any provision in a treaty with Britain would be a safeguard; provisions which smacked of privilege always tended to attract hostility, but he wanted representation in a Constitution-making body to present his case. He was prepared to accept his fate at the hands of the other leaders of India.

With regard to Dr. Shahani's remarks he did not hold his community blameless, but it was not entirely blameworthy, and perhaps when Dr. Shahani was in India the attitude of the Anglo-Indian left something to be desired. He himself was the most ardent critic of the attitude which Dr. Shahani condemned, because it not only tended to create friction but to make the Anglo-Indian look away from his friends in India. That was all changing; he had set himself to change the psychology of Anglo-Indian education, to make the Anglo-Indian proud of his position, to know that India was his country and all Indians were his brothers. When that was accomplished the Anglo-Indian schools would make a most vital contribution to Indian life generally. With regard to Eurasia, there were no half-castes; India was the greatest hotch-potch of castes ever seen; and why were the Americans and the British the most virile races? Because of their age-long intermingling with the other races of the world.

Sir Harry Haig proposed a vote of thanks to the speaker and the Chairman, which was accorded by applause.

POST-WAR DEVELOPMENT SCHEMES IN NORTHERN AND CENTRAL INDIAN STATES

By Sir William Barton, K.C.I.E., C.S.I.

In a paper I read last May to members of the Royal Society of Arts and the East India Association I discussed the post-war economic policy of the States of Southern India. On that occasion I was concerned with five or six of the larger States—for example, the Dominions of His Exalted Highness the Nizam of Hyderabad, in size and importance rivalling Siam, Burma or Afghanistan; of the others Mysore, Travancore, Cochin are not only economically developed but have, in the political field, closely approached the position of constitutional monarchy.

The States of Northern and Central India vary greatly in size and importance. The Simla hill States, for example, are small patches of mountain territory where primitive people are governed patriarchially by Rajput chiefs. There were, till recently, hundreds of semi-independent fiefs in the Kathiawar peninsula and on the borders of the British Province of Gujarat; they have now been amalgamated with the States to which in pre-British times they were accredited. The great majority have been attached to Baroda.

In Central India there are about eighty States, varying from Gwalior, with an area of 26,000 square miles, nearly as large as Mysore, to States of three or four square miles. It is the policy of His Majesty's Government, through the Viceroy as Crown Representative, to induce these small States to form groups for common purposes, such as an up-to-date police administration, the establishment of High Courts, expert medical supervision, economic development and other administrative requirements which, left to themselves, they would be unable to provide.

Rajputana, the national home of the Rajputs, is a vast tract of country of 128,000 square miles, mostly desert. Several States of importance—Bikanir, Jaipur, Jodhpur, Udaipor—divide most of this territory between them.

Patiala and Bahawalpor are the leading States in the Punjab group. Most northerly of all is the great State of Kashmir.

In my earlier paper I sketched briefly the origin of the Indian States. I noted that many of them were succession States to the Mughal Empire; of those with which we are concerned this afternoon, the States of Bhopal, Bahawalpor, the Sikh State of Patiala, the Maratha States of Baroda, Gwalior and Indore come within this category. Patiala sought British protection early in the nineteenth century against Ranjit Singh, Ruler of the Punjab; the Maratha States came into subordinate alliance with the British after their defeat in 1818, with the exception of Baroda, which had been in alliance with Britain nearly half a century before.

The Rajput family which now rules Kashmir acquired that country in 1846. It had been ceded to Britain by the Sikhs in lieu of an indemnity of a million sterling after their defeat in an unprovoked attack on British territory. The Rajput chief of Jammu offered to pay the indemnity if Kashmir were handed over to him. The British had no desire to add to their administrative responsibilities and accepted the offer on condition that the chief acknowledged British suzerainty.

So much for the historical background. As in the Southern States, the administration in most of the States in Central and Northern India is modelled on British Indian principles. Much progress has been made in the constitutional field and in most of the important States—Kashmir, Patiala, Baroda, Bhopal, Jaipure, for instance—the people's representatives have been brought into close touch with the administration; in some—*e.g.*, Baroda, Kashmir—through responsible ministers. Government is generally in the hands of an Executive Council. In some respects the States are in advance of British India. In Baroda, for example, child marriage was prohibited long before a similar step was taken by the Indian Government. The percentage of literacy in this State, 25 per cent. is twice that of its great neighbour.

Some of the States have already much to show in industrial and economic development generally. Indore, for example, stands fourth in India in the development of the textile industry. Kashmir has many indigenous industries—wood and metal carving, furniture and carpet manufacture, homespun woollen cloths, silk. The artistic excellence of Jaipur metal-work is well known. The production of munitions for the Government of India in most of the States has led to an improvement in technique in industry and the training of many new recruits for its mechanical processes.

Thus post-war development has a favourable start. The Princes and their advisers take a broad view of the principles involved; it is not, they feel, enough to concentrate on efforts to raise the standard of living. If the common man is to be better off it is necessary to improve his outlook on life. Better housing they consider is essential; so too is education; medical relief must be more readily available. Improvements in roads, railways and communications generally figure in most programmes. The leading Rajput States, especially Kashmir and the Maratha States, have furnished many recruits to the Indian Army, and have placed most of their regular forces at the disposal of the King-Emperor. It is satisfactory to note that in the economic policy of these States the resettlement of demobilized soldiers takes a prominent place.

As regards labour conditions in the States in question it may be noted that in practically all of them legislation encouraging the growth of Trades Unionism has been enacted. Workmen's Compensation Acts and Maternity Benefit Acts have been passed by many of them; child labour is regulated by statute.

As in British India, more than 80 per cent. of the people of the States live on the land. The principal market for urban industry is in the villages; the planners in the States realize that effective development demands a correct balance between industry and agriculture. The emphasis in most plans is on agriculture. Much is to be spent on irrigation, both from wells and canals, on animal husbandry and on improved methods of farming. As regards industry, the general policy is to leave a free hand to private enterprise. The State is, however, prepared to aid new industries, especially in providing cheap power. The absence of coal in most of the States is a handicap to industry; it is hoped to overcome this in many cases by the development of a cheap supply of electricity by means of water power. Large sums are set aside in most States for the training of technicians, both in State institutions and in Britain and the U.S.A.

BARODA

I pass on to consider the more important schemes of development in the larger States; Baroda takes a prominent place. With the 246 small States of Kathiawar and Gujarat recently attached to it, it has an area of 14,000 square miles and a population of 3,500,000. A Board of Industrial Advice has been set up, including several leading industrialists from Bombay, like Sir Homi Mehta and Sir Sultan Chinoy. (The former, by the way, has several mills in Baroda, and proposes to set up new ones.) A Development Minister has been appointed. Baroda has already 866 miles of railway; extensions of 157 miles are required to open up the attached States. It is proposed to spend £2,000,000 on roads and £1,500,000 or railways. An electric grid to supply power to industry and for lighting towns and villages is to be set up, current being taken from the grid the Bombay Government have planned for Gujarat. £500,000 is to be spent on electrically driven tube wells for irrigation purposes. Other irrigation schemes are being taken up. The expansion of industry will be encouraged by loans. Already Baroda has nineteen textile mills. It is hoped to double them in the next five years.

At the western end of the Kathiawar peninsula Baroda has an all-weather port, Okhamandal, which handles some 300,000 tons of cargo yearly. It is proposed to instal a ship-building yard in this port, capable of building four steamers of 8,000 tons capacity a year.

As regards finance, for many years the public revenue of Baroda has been carefully handled and there are large reserves available. The capital resources of the State generally, built up by huge accumulations of war profits, should in the opinion of the Prime Minister, Sir Brojendra Mitter, be forthcoming to help carry out the State plans.

The Baroda Government have given a squadron to the R.A.F. The State and its people have made considerable contributions to war funds. The State has its up-to-date technical institute; hundreds of men have been trained for the technical services of the Indian Army. Textiles and drugs in large quantities have been supplied to the Government of India. A Baroda battalion is serving abroad.

CENTRAL INDIA STATES

The other two big Maratha States, Gwalior and Indore, emulate Baroda, both in administrative and economic development. Gwalior, like Baroda, is financially sound; the late Ruler not only built up very substantial reserves but did much to promote the success of the great steel firm of Tatas by investing huge sums in the enterprise. Many industries have been established in Gwalior; the State has given a lead to India in providing motor transport facilities. A seaplane base has been established on a great artificial lake near the capital city. Over £2,000,000 has been spent in the past few years on irrigation. Various hydro-electric projects are under consideration. Proposals have been made for setting up a system of collective farming, for regrouping holdings into economical units, and for finding employment for men who lose their holdings in the regrouping process. Old and uneconomical cattle are to be destroyed. One imagines that the Indian peasant would not readily adapt himself to such a revolutionary scheme.

Gwalior has one of the best armies in the States. The greater part is now serving overseas or in India.

Indore, as already observed, is noted for its textiles. Its mills have supplied £3,000,000 or £4,000,000 of different kinds of cloth to the Indian Army. In this State post-war planning generally follows the lines adopted elsewhere. The financial position is sound, helped by the policy of the Ruler in maintaining a comparatively small civil list.

Other important States in Central India deserving notice in the present context are Rewa and Bhopal.

Rewa is one of the largest Rajput States with an area of 13,000 square miles, and a population approaching 2,000,000. It is a backward country and a large proportion of the population are aborigines. Roads and railways are lacking; the State capital is not linked to the main railway system of British India. Defective communications are one of the reasons why the great natural resources of the State are undeveloped. The State authorities feel that the time has come to make good the leeway. There are extensive coalfields so far undeveloped, the output being only 35,000 tons a month. The reserves of coal are, in the opinion of the geological experts of the Government of India, enormous. Several new collieries are to be opened at once.

The post-war plans the State proposes to put into effect include the development of communications by means of roads and railways, hydro-electric schemes, and the extension of irrigation. A scheme of hydro-electric development, planned to pro-

JODHPUR

Of other Rajput States Jodhpur is well known for the interest the Ruler, himself a skilled pilot, takes in aviation. There is a big civil aerodrome at the capital, and during the war Jodhpur has been an R.A.F. centre. The State, which is second in order of population in Rajputana, is mainly agricultural. A Development Minister has been appointed and a five-year plan elaborated. The resettlement of demobilized soldiers has a prominent place in the schemes. A combined hydro-electric and irrigation scheme, to cost £1,000,000, is to be carried out; heavy chemicals, cement, woollen and cotton textiles are among the industries it is proposed to establish. Several towns are to be electrified. About £1,000,000 is to be spent on railways, largely in re-equipment.

As already noted, Kotah and Udaipur share in a joint electric scheme with Jaipur. The small State of Bundi has a hydro-electric scheme on the Mez river.

KATHIAWAR

Only seven or eight States in Kathiawar are of any importance—*e.g.*, Kutch, Bhavnagar, Nawanagar, Porbandar, Junagadh, Rajkot, Morvu. Though small they are progressive. Bhavnagar, for example, ten years or so ago scaled down the rural debt carrying 25 per cent. interest, and lent the amount necessary to liquidate it to the peasantry at 4 per cent. Rajkot is planning an industrial town which will be supplied with electric power. The peninsula has a considerable maritime trade through its ports, Porbandar, Verawal (Junagadh), Nawanagar.

Most of the States are planning an expansion of industry and agricultural development. As regards industrial development much would be gained by a policy of co-operation in, for instance, the development of electric power, the joint working of railways, and telephones with a network of telephones over the peninsula. A big power station at the port of Bhavnagar on the East and another at Okha in the West could import coal cheaply from Calcutta or South Africa and supply the whole peninsula at cheap rates through a grid.

PATIALA

Patiala is the most important of the Punjab States. It is an important Sikh centre; the population of nearly 2,000,000 is mostly composed of Sikhs. Over 60,000 Sikhs from the State have enlisted in the Indian armies; a Sikh battalion from Patiala won renown in the defence of the Indian frontier against the Japanese. The State is mainly agricultural. Like Bikanir it is to share in the benefits to be derived from the Bhakra dam project. 500,000 acres will be irrigated from the new canals. Much will be done for the home-coming soldier. Patiala is only 50 miles from the Bhakra dam and will take power from the hydro-electric system that is to be set up there.

In the time at my disposal I can only refer in passing to one other Punjab State, Bahawalpor, a Muslim State, third in importance in that category. Situated in the south-west of the Punjab it was in a position to benefit from the Sutlej Valley irrigation project engineered by the Punjab Government. With an expenditure of nearly £12,500,000, Bahawalpor has been able to bring water to 2,500,000 acres of desert country in recent years. This has absorbed most of its finance, and for the next few years the State Government will be occupied in developing the new canal colonies. An elaborate system of road development combined with a motor transport system is to be carried out.

KASHMIR

Last in the series is the great State of Kashmir. With an area of 86,000 square miles it is a little larger than Hyderabad, but has less than a quarter (4,000,000) of the Hyderabad population.

The State has vast resources at present very undeveloped. Extensive forests yield a large revenue; there is a flourishing pastoral industry; the finest fruit in the world can be produced in great quantities; the indigenous industries of the country already noted, such as wood carving and metal work, papier mâché and other art productions, employ large numbers of the population. The beauty of the hills and valleys of Kashmir with their bracing climate attracts thousands of visitors, Indian and British, in the summer months; tourism is, in fact, a very profitable industry. It is proposed to encourage it by an elaborate scheme of development in the favourite hill resort of Gulmarg. Coal of good quality occurs in large quantities in the valleys bordering on the Punjab, but lack of communications has so far prevented its exploitation. There is reason to suppose the existence of oil in the southern areas of the State. Many other minerals are found—mica, copper, barytes, iron ore, bauxite—but so far little has been done to exploit them.

The dearth of good roads is a drawback to economic development. There are no railways in Kashmir. Post-war planning aims at removing this defect, not only by expanding the road system but by setting up trolley buses on the main lines of communication with India. There is a scheme for connecting by this means Jammu, the winter capital, with Srinagar, at a cost of £1,500,000. This would involve tunnelling at 7,000 feet. Fifty motor buses will be run each way daily, carrying passengers and goods. In fact, the bus system is to be a substitute for railways; the scheme when carried out should be a great stimulus to trade, especially to the fruit industry, to tourism, and to the artistic products of Srinagar.

Kashmir has almost limitless opportunities for producing hydro-electric power. At present only a small-size almost worn-out system is working. It is proposed to set up a new installation in the Sind Valley at a cost of £250,000 to produce 6,000 kilowatts. Another much larger system is planned at Riasi on the Chenab, near the Punjab frontier. The cost has not yet been worked out. The current used by these schemes will be used to drive the trolley buses, in industry, for lighting and heating and for pumping water from the Jhelum for irrigation. Elaborate plans are being prepared for finding employment for and re-settling on the land of about 50,000 demobilized soldiers, most of them recruited for the Indian Army. Kashmir sent several battalions to the front, all first-class material. The Kashmir Mountain Battery did fine work at Keren in the Abyssinian campaign. Improvements in agriculture and animal husbandry and forestry are to be carried out. A drive has been made of recent years to abolish illiteracy among adults by a system of evening classes.

THE STATES INDUSTRIAL DELEGATION

In conclusion, I would remind British industrialists that the Indian States have sent over to Europe and America a Trade Delegation to invite co-operation in their development schemes. In parenthesis it may be noted that the States have expressed their readiness generally to adapt their economic policy to the policy of the Government of India, while keeping a free hand as far as possible in their own territories. British co-operation is especially desired. The States wish to maintain and strengthen the British connection, not entirely for their own selfish purposes, as their detractors would assert, but because in their view a self-governing India should, in her own interests, remain in the British Commonwealth; economic collaboration would strengthen the link.

Sardar H. S. Malik, Prime Minister of Patiala, leader of the Delegation, told Press representatives in London that they had orders to place for a very large amount of machinery and equipment. Machinery covers a wide range, and includes railway material and rolling stock, road-making machinery, machine tools, textile machinery and electrical apparatus of all kinds. Technical advice and assistance are specially desired. The States responsible for the Delegation are mainly those whose plans I have discussed in this paper.

The discussion on this paper read at a joint meeting with the Royal Society of Arts on December 6 will be given in the April issue of the ASIATIC REVIEW.

(End of the Proceedings of the East India Association.)

CHINA'S POST-WAR INDUSTRIALIZATION

By Yun Chen

(Head of the Delegation of the National Resources Commission)

China's post-war problem is quite different from that confronting Great Britain as well as from that of the United States. Whereas your problem is one of a comparatively smooth transition from a wartime economy to one of peace, a problem of how to maintain full employment when millions of servicemen and defence plant workers return to their normal life, ours is a problem of how to reconstruct our economic life, how to change our methods of production as well as our ways of living. In other words, your main job after the war is to readjust what you already have had, while ours is to construct what we never possessed.

If any one word could well represent our post-war problem and policy that word should be "*Industrialization.*"

When an Englishman or American hears such a word he may find nothing particular in it, because he is already familiar with it. In China, however, this word carries a very deep meaning. It means a radical deviation from the traditional way of thinking. It indicates a new awakening, not only of the Government and leaders, but also of the common people. It is now no exaggeration to say that industrialization has become a *national* movement in China.

This movement has not arisen by accident. Bitter facts and painful experiences during the last several decades, especially during the eight hard years of war against Japan, have continuously taught us that industrialization is the only way out for China. Now, both the Chinese Government and people are determined to realize it, so determined, in fact, that nothing in the world can stop us from working for that goal.

China fully realizes that without industrialization the standard of living, or we may say the purchasing power, of her four hundred million people can hardly be raised; without industrialization she can hardly be a stabilizing factor in world peace and world prosperity. She realizes that if her eight years of war against the invader are not to be followed by a full-swing programme of industrialization, the blood of millions of her people will have been shed in vain.

Some friends in the United States and Great Britain warn us that in view of the present situation in China it is too early to talk about industrialization. China should first have a stabilized monetary system, then good roads and good communications, then good public utilities, then good irrigation systems and waterworks, then good farms, then and only then she can talk about industries. Such an idea is excellent. However, what we mean by industrialization is not the establishing of some industrial and mining enterprises alone. Industries and mines are only the backbone of industrialization. Their development must be accompanied by a sound money and banking system, modernized transportation and communications, adequate power plants, large-scale waterworks and irrigation systems, and most important of all, mechanized agriculture. This whole process is, for us, called industrialization.

Rome was not built in a day. Industrialization in China is a big job which is to be carried out step by step through many years to come. But it must be carried out, from the very beginning, in a well-balanced and well-co-ordinated way. The development of industries and mines must be co-ordinated with that of agriculture. And the development of capital-goods industries must be co-ordinated with that of consumption-goods industries. And Government enterprises must be co-ordinated with private undertakings.

We deeply admire the marvellous industrial achievements of Great Britain and the United States under their free-enterprise system. We also admire the wonderful industrial achievements of the Soviet Union under its planned State economy. But we are in no position to copy slavishly either of these two good systems, because existing conditions do not permit of our doing so. We have to find our own way. That way is a co-ordinated economy with the Government playing an important part. We don't want to have a planned economy handled entirely by the State. But that does not mean that we cannot have economic plans. Actually we have a first draft of a post-war five-year-plan, a plan for industries and mines, for transport and communications, for irrigation and agriculture. We plan not only for our Government undertakings, but also for the major activities of private capital. We plan not only for the development of different branches of economic activity, we also plan for their co-ordination.

In one word, we plan for the most efficient way of achieving industrialization.

As I have already stated, the rôle the Government will play in China's economic reconstruction is all-important. This is so, not merely because of the intention of the Government to maintain the key economic activities of the country under its control, but also because of the fact that in a country like China private capital is far from being strong enough to take the whole responsibility of carrying out our economic reconstruction programme. There are enterprises which rank very high in the priority list and yet are not attractive to private capital from the profit point of view. There are enterprises which China needs most urgently and yet, because of their tremendous scope, private parties are not able to undertake them. There are other enterprises which, because of their monopolistic nature, are not suitable for private operation. Such enterprises will become "nobody's business" in China, if the Government is not prepared to take them up. The Government should do what private parties will not, cannot, and should not do. And there lies the reason why the Chinese Government has to play an important part in our post-war economic reconstruction. Taking enterprises individually, private operations may be more efficient than Government operation. When I say "may be," there is of course a possibility of "may not be." However, taking a nation's economic reconstruction as a whole, State enterprise and State-controlled undertakings will certainly be much more efficient and effective than private concerns in achieving a definite aim set up in a programme with a short time-limit.

As is the case with Great Britain, China's State enterprises will be confined to a limited field, such as some key industries, railways, central banking business, etc. There are a thousand and one industries and other economic undertakings, which our Government will encourage, foster, assist, and, when necessary, even organize private capital to develop. We do not wish to abolish private initiative and private investment, we even want to strengthen them.

China is an economically backward country. In order to carry out any sizeable reconstruction programme, we need foreign assistance, financial, technical, managerial and even moral. Just as we needed the close co-operation of the Allied Powers to win a war against the Japanese invader, so we now need your collaboration and assistance to win a war against our internal economic handicaps and backwardness. Every Chinese is grateful for what your country did in assisting us to establish a new monetary system in 1935. Without such a monetary reform eight years of war would, financially, have been unthinkable.

China always welcomes foreign investments. Several decades ago Dr. Sun Yat-sen, father of the Republic, laid down the foundation of China's industrialization programme, under the title of "International Development of China."*

It is true that there was a time when the industrialists and business men of friendly foreign nations hesitated to make investments in China. And there was a time when the bona-fide intentions of foreign investments were somewhat doubted by some over-cautious Chinese because of the extra-territorial rights then enjoyed by foreigners. But now such times are past. China feels self-confident in her maturity in the family of the United Nations and has made up her mind to welcome foreign capital with almost no restrictions. New legislation will be enacted as soon as possible to facilitate such capital measures. The old limitations as to the percentage of shares owned by foreign investors are to be no longer effective.

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Besides the assistance to be obtained from foreign Governments and investors, China will, of course, put up her own best. She must fully utilize both her public resources and the people's savings for the national programme, without much sacrifice of her people's standard of living, which is already very low. China is entitled to get heavy reparations from Japan in kind, especially in her industrial properties. Chinese exports must be increased in order to balance her heavy imports.

We are quite familiar with the fine workmanship and design of British machine goods and textiles. We would like to buy more capital goods from your country as soon as transport facilities are recovered. We hope you will help us in building up a textile industry which will take up Japan's former position, but which will not create keen competition with your fine textiles. As you know, Chinese silk and tea are exquisite. Please drink more Chinese tea and use more Chinese silk. As we grow to understand each other more deeply in our cultural relations, so will our trade relations become more intimate.

In conclusion, I cannot over-emphasize the fact that the most immediate objective of our modest industrialization programme is to raise the standard of living and the purchasing power of the common people in China. Chinese cheap labour must no longer be exploited by our foreign friends, nor by our own nationals. The worker must have decent living conditions and reasonable wages. As soon as he can buy more and enjoy life more the peace of the Far East, and ultimately of the world, is secured.

COMMERCIAL REHABILITATION IN CHINA

By Wang Hsiao-Lai
(Member of the People's Political Council and Chairman of the Shanghai Chamber of Commerce)

With the conclusion of World War II the attention of the protagonists has turned to the problem of rehabilitation. Commercially, China is faced with two main problems which await immediate solution. How should commercial prosperity be maintained and trade development be stepped up? And how should war-time commercial barriers and handicaps be abolished?

To maintain commercial prosperity and promote trade several steps must be taken. Now that the war has ended, many Government employees and a large number of refugees will be rushing back to the coastal provinces from the interior. Allied friends who have been in Free China will be sent eastward or else return to their own countries. As a result, commodity prices in the coastal provinces will rise while those in the interior will suffer a major slump. If the Government banks are ready to issue loans at low interest rates merchants in the interior will not have to dump their commodities on the market, and the fall in prices may therefore not be too steep.

Meanwhile, the Government should adopt relief measures for helping refugees and Government employees who are returning to the recovered areas. Subsidized travelling expenses would enable them to bring more material resources with them, thereby helping to balance markets both in the interior and the coastal provinces.

As the currencies issued by the Japanese and puppet Governments are now worthless and the amount of "fapi" (legal tender) in circulation in the recovered areas is limited, immediate steps should be taken by the Government to maintain local trade. This can be accomplished by restoring Government financial organizations throughout these territories and increasing their reserve funds.

Now that the banks owned by the Japanese and puppet Governments have suspended operations, their properties should be placed at the disposal of the Government. The Japanese should be held responsible for the notes which were issued as well as for deposits.

Transportation and communication between the interior and the coastal provinces should be greatly facilitated. The extension of communications over a wide area would mean an expansion of commodity markets, and this would have a favourable effect on prices. For the purpose of maintaining production industrial and commercial enterprises should be protected. Many a factory in the interior is too poorly equipped to be moved, but it was these concerns that battled hard to keep going during the long war years. It will need a large number of technicians and specialists to take over the factories owned and operated by the Japanese and their puppets, and the concerns in the interior should be given an opportunity of developing and promoting them.

With regard to the removal of handicaps to trade, our economic structure has been mainly built on lines laid down by Dr. Sun Yat-sen in his *Industrial Plans for China*.* Industrial development will be along two lines: private enterprises, which should be encouraged so as to meet the vital economic needs of the people; and state enterprises, which are comparatively few as China is an agricultural nation.

The traditional price policy has been *laissez faire*, but during the war inflation and shortage of materials had caused an incessant rise of commodity prices. Hence price control, which was aimed at relieving the salaried class. Owing to lack of experience and ineffective control measures, however, this was not a success. It resulted in decreased production, market confusion and inconvenience to the consumer.

With the end of the war commodity prices are steadily declining. The necessity for price control, therefore, no longer exists. It may be argued that a fall in prices should also be controlled because it is unfavourable to the producer. But, judging from the actual situation, I am convinced that more panic has been caused by price control than by any sudden slump in prices.

Certain controls of materials and resources imposed by the Government should also be abolished. Taxes in kind which were aimed at increasing the national income, guarding against inflation, and off-setting the evil caused by cornering the market and hoarding in war-time, were a supplementary measure to price control and should be discontinued.

Regulations prohibiting the establishment of commercial banks and the opening of new branches of existing banks are likewise no longer necessary. In war-time such regulations are useful for preventing banks from abusing their privileges, but in peace-time they are only handicaps to trade. With commodity prices steadily falling hoarding is no longer profitable and is not practised. Furthermore, unscrupulous inspections and searches of goods carried out by national and local organizations impede the circulation of commodities and cause great inconvenience to merchants.

An essential and fundamental step to economic reconstruction is the raising of the value of our national currency. The relationship between currency and commerce is like oil to a machine. A sound currency system is essential for the free flow of commodities, and the problem of the rehabilitation of trade in China cannot be solved unless and until a stable national currency has been established.

THE DEVELOPMENT OF EDUCATION IN TURKEY

By K. R. and A. R. Maxwell-Hyslop

To understand the aim and achievement of modern Turkish education it is essential first to consider the main principles of Ottoman education and to realize how, since the eighteenth century, educational progress in Turkey has been indissolubly linked with the development of the idea of Westernization. The Islamic religion not only regulated the duties of the individual to God and his fellow-men, but provided the basis on which depended the administration of justice and the growth and organization of education and learning. To Muhammad himself are attributed the sayings, "The ink of the learned and the blood of the martyrs are of equal value in the sight of heaven," and "a father can confer upon his child nothing more valuable than a good education"; and therefore Sultan Mahomet "the Conqueror" dutifully followed the tenets of his religion in founding eight "medreses" (theological seminaries) round the mosque which was named after him in Constantinople and in making his new capital a centre of learning and culture. It is, however, the age of Sülayman "the Magnificent" (1520-1566) which can be described as the most enlightened period of Ottoman education. In his brilliant reign the study of medicine, mathematics (considered the basis of the study of law), natural science and Arabic literature, as well as purely theological studies, flourished in the reformed "medreses"; primary schools attached to mosques and preparatory "medreses" ("tetummes") were established; and Sülayman's services to Turkish education are remembered by his reorganization and extension of public instruction and his liberal and far-seeing patronage of learning and the arts. Yet it is not surprising that after Sülayman's reign the "medreses" became centres of narrow scholasticism and sophistry and made no intellectual advance. The spirit of Turkish learning was based both on the Koran and on the survival of Greek philosophy, which had been transmitted to Turkey through Muslim scholars writing in Arabic, and the influence of Aristotle, as interpreted by Muslim philosophers, still lingered on among the "Ulema" or learned men, who were averse from taking advantage of the contacts with Europe opened up by Sülayman's enormous European empire. Confining their intelligence to Oriental modes of thought and expression and to traditional methods of teaching they were opposed to any new ideas and experiments. Thus during the late sixteenth and seventeenth centuries while in Europe the boundaries of knowledge in science, medicine and the humanities were being swiftly advanced, Turkey was left outside the main stream of Western culture and decay soon set in.

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* These Plans were originally written in English and entitled "International Development of China."

The movement for Westernization may be said to date from the reign of Sultan Ahmet III (1703-1730). Under the stimulus of misfortunes and disasters abroad, progressively minded Turks began to realize that European civilization possessed certain valuable qualities from which Turkey might benefit, and a small though insistent demand for reform gradually arose. Under the wise patronage of the Grand Vizier, Damat Ibrahim Pasha, who was anxious to introduce European culture as a stimulus to the sterility of the Turkish learning of his day, literature, art and science began to develop and the process was accelerated by a Hungarian Prince who became a Muslim and imported the first printing press to Turkey. Not unnaturally the progress made in Europe was specially evident to the army, and it was due to the efforts of a French count who had taken service with the Sultan that the first School of Naval Artillery was founded at Scutari in 1732.

A more definite shape was given to the efforts for reform by Sultan Selim III, who was convinced of the necessity of radical reform in all branches of government and education. Beginning his rule in the same year as the outbreak of the French Revolution, he made energetic efforts to raise the level of education among all classes of his subjects and encouraged the translation of many European works of science into Turkish. He was anxious to obtain all the information possible concerning the nations of Europe and to find out the cause of their superiority on the field of battle. In his youth he had even sought political instruction from the French King through a confidential agent. Some of his actions were inspired by a far-sightedness and toleration most remarkable in his day. For example, when the Greek revolutionary movement tried to inflame anti-Turkish feeling in the new schools which had been opened in Greece, Selim, instead of closing them, decided on the novel and wiser course of employing Greek clergy to write treatises in favour of the Turkish Government and established a Greek printing press in Constantinople. Another notable feature of the reign was the sending of Turkish missions to be attached to the permanent embassies which the Sultan endeavoured to establish at the chief European courts, so that by visiting London, Paris, Vienna and Berlin, a certain number of his subjects could be provided with a wider political education than they could ever have acquired at home. Yet so far was he in advance of Turkish thought of his day, isolated as it was from European civilization, and so great the opposition which his reforms aroused, that they ultimately cost him his life at the hands of the reactionary Janissaries.

Throughout the reign of his successor Mahmud II (1809-1839) "the Reformer," when Turkey was immersed in troubles in many parts of the empire and in financial difficulties at home, both the movement for Westernization, symbolized in the military sphere by the abolition of the Janissaries, and the opposing forces gathered strength; and in 1824, although there were as yet hardly the means to put it into practice, compulsory education for all as part of a general drive for Europeanization was proclaimed by the Sultan, and plans were made to modernize the existing schools. In spite of fanatical opposition the first secondary schools or "Rüştiyes" were established and a medical school opened. Sultan Mahmud's first efforts to send 150 students to study in Europe were defeated, but later some officers of the artillery school and various others, including the chemist Dervish Pasha, succeeded in going to England. Among the many services which Sultan Mahmud rendered his country, the careful education of his successor, Abdul Mecit, must not be forgotten, and his father's instructions that the reforms already initiated must be continued and extended were faithfully observed by the new Sultan.

The historical period commonly known as the "Tanzimat" or "Reform" dates from 1839, when legal sanction was given to the movement by the Sultan's proclamation of the "Hatti Şerif" (Imperial Charter). This resembled the French "Proclamation des Droits de l'Homme," and proclaimed equality of civil rights for all citizens, Muslim and non-Muslim, based on the principles of liberty and justice. It was followed in 1845 by another important edict which decreed that the education in the existing primary schools was to be free and made secondary education, hitherto practically non-existent, compulsory. A new programme of education for the whole empire was announced, reform of the medical and military schools decreed to be necessary, and proposals made for the foundation of more primary and secondary schools and of an Ottoman University. A Council of Public Instruction was set up to supervise the execution of this policy, and, a significant pointer to the future, while the "medreses" remained unchanged, the new primary schools were made independent of the monopoly previously exercised by the "Ulema" and of the control of the highest religious authority of the country, the Sheikh-ul-Islam. Up to this point the move away from the traditional conception of education as the prerogative of the religious organization was only indirect, but in 1860 progressive educationists founded the Ottoman Scientific Society whose avowed aim was the promotion of secular education. A few teachers were therefore sent to Europe to get the necessary training for becoming teachers at the Turkish University; while in 1858 the Normal School for Boys and the School of Political Sciences were founded, the latter in order to provide the country with a competent and trained civil service, capable of administering the new reforms.

It is difficult to estimate the comparative extent of English and French influence during the Sultanate of Abdul Mecit. The English influence, which is of course especially associated with Sir Stratford Canning, was perhaps more direct, but was mainly confined to the political field. French influence, on the other hand, acting less directly, exercised itself first on literature and advanced political theory, though the Young Turks, at the head of the movement for reform, acknowledged their debt to the ideas of Mill and Spencer as well as to those of Rousseau and Voltaire, in continuing their efforts to pave the way for extending European influences in both politics and education. It was, however, by French modes of thought and expression that the pioneers of new ideas, led by Shinasi Effendi and Namik Kemal, were most profoundly influenced. The translation of Rousseau was undertaken by Ziya Pasha and that of modern French poetry by Shinasi himself, who later founded the first Turkish newspaper. In the reign of Abdul Aziz (1860-1876), however, the French began to take an active part in the field of education. Galata Saray Lycée, with its modern curriculum taught in French, was founded in 1868, with the help of the French Ambassador; the following year saw the issue of the General Regulations for Public Instruction, modelled on French educational organization and the opening of Istanbul University, equipment for the libraries and laboratories being brought from Europe.

The regulations imposed a European pattern on the various stages of education; the schools were divided into two types, public and private, and the educational course into three stages: (1) primary schools, (2) secondary schools and Lycées, and (3) University and higher education. Unfortunately, however, the movement for reform, which had advanced so rapidly, at this point suffered certain set-backs, the most serious being the closure of the University in 1871, the lectures being later transferred to the Galata Saray Lycée.

The year 1876, which saw the foundation of the Ministry of Public Instruction, saw also the deposition of Abdul Aziz, the direct result of the activities of the Young Turks; but its immediate effect was not to advance the cause of reform, for the new Sultan, Abdul Hamit, promptly exiled the Liberal leaders, who departed to France. None the less, throughout the period of the Hamidian tyranny the influences of French secularism still persisted, and after the Revolution in 1908 the advance could, though slowly, be resumed; a Normal School for Girls was opened, and a school for Muslim girls, founded by Mehmet Riza Ali, the Masonic President of the National Assembly. Yet throughout the troubled and unsettled conditions of the period from 1908 to the foundation of the Republic in 1923 educational progress was constantly hampered by opposition from the religious leaders, and by the fact that new ideas and methods had to be grafted on to a system which, as long as the "medreses" exercised a predominant influence, was still fundamentally religious in basis. Consequently in all the educational institutions of this period it is possible to discern a lack of policy and a general hesitancy due to the lack of unity among the different schools and to the struggle between the secular and religious ideals and methods of teaching, while the reorganization of the University of Istanbul and the translation of European educational works could only partially improve the situation. Certain institutions, such as the Medical School, adhered to European technique, and among the intellectuals of that time the influence of Ziya Gök Alp, Professor of Sociology at Istanbul, and Professor Ismail Hakki, one of the founders of the National Society of Education and Instruction, must be regarded as especially important in preparing the way for the real reforms which were to come.

There is no need here to elaborate the early history of the Kemalist revolution, but only to put into proper perspective the remarkable achievements in the field of education. The situation was briefly that outlined above, when in 1924 the American Professor John Dewey was invited to visit Turkey and report on the state of education to the new Government. The aims and the nature of the organization of education in Turkey today afford proof of the extent to which his recommendations were followed. Among the many enormous tasks which confronted the Republic the importance of the problem, often attempted in the past, but never solved, of providing universal education was this time taken to heart, and in order to make full use of the experience of educationists in other countries the Minister of Education, accompanied by a commission of experts, made a series of visits to inspect the systems of Czechoslovakia, Germany, France, Italy and England, while numerous reports were published, notably that of Professor Ismail Hakki on the experimental schools of Europe, and others on the commercial and technical schools in England, the People's high schools in Denmark, and the Sokol organization in Czechoslovakia. The help of Switzerland was also invited, and in 1932 Professor Malche of the University of Geneva was asked to propose measures for the reorganization of Istanbul University. These foreign contacts have continued; a delegation of Turkish educationists visited technical colleges in this country just before the war, and Professor S. J. Davies has lately been studying Turkish technical education under the auspices of the British Council.* In 1939 the State had sent and was maintaining abroad no less than 560 students.

While foreign advice and help was welcomed by the new Republic, the system devised by Atatürk's Government was especially designed to solve the many intricate problems which were peculiar to Turkey, and it reflects in all its aspects the ideals and aspirations of the Republic. The problem of eliminating illiteracy was helped by the adoption of Latin characters and the energy and enthusiasm brought to the task of extending education in primary, secondary and higher grades may be measured by a study of some recently published graphs which illustrate the remarkable achievements of the Turkish Ministry of Education. The figures shown here are, of course, approximations.*

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* The authors are grateful to Professor S. J. Davies for valuable information concerning technical education in Turkey today.

Education (Years).	*Primary Schools.*	*Teachers.*	*Pupils.*
1930-31	6,000	16,000	500,000
1940-41	10,000	19,000	950,000
	Secondary Schools (including Lycées).		
1930-31	90	1,500	30,000
1940-41	225	4,800	122,000
	Technical Schools.		
1930-31			
1940-41	60	850	11,000
	Universities and Advanced Colleges, etc.		
1930-31	10	500	4,500
1940-41	18	800	14,000

These figures show most clearly the tremendous expansion which has taken place in the past decade and this is still continuing. As might be expected, the expansion has made it impossible to maintain the former pupil-teacher ratio. Too much emphasis, however, should not be laid on this, since in the multiplicity of small villages (there are over 40,000 with a population of less than 400) a special kind of primary school, known as the "Eğitmen" school, has been devised as a necessary practical measure. These schools, of which there are over 5,000† with over 150,000 pupils, are staffed by teachers who themselves belong to the villages and who, after completing their military service, undergo one year's training either at a village institute or at the place where their military service was performed. They then return to their own villages to teach. The arrangements invite an obvious comparison with the recently announced schemes of English post-war emergency training courses for teachers. The parallel cannot be taken too far since, while the fundamental purpose is the same—to supply the largest number of trained teachers in the shortest possible time in order to realize ambitious educational reforms—the details of the project differ, as do the background and age of the system against which they are framed. It is, however, interesting to note that in each case one year is assumed to be the minimum period required for the production of the competent teacher. Only time will show whether this estimate is as true for England as it has proved to be in Turkey.

The bias of the education given in the village schools, which is perhaps typical of the general spirit which informs Turkish education, is practical, with a strong emphasis on agricultural and domestic subjects, as well as on the three R's. This emphasis is carefully fostered by the Ministries of Education and Agriculture, and gives expression to the Government's policy of encouraging better cultivation and so raising the rural standard of living. The village institutes which have been mentioned, and the development of which is being steadily encouraged, are to some degree comparable with the English rural senior or modern school. They take children aged between twelve and seventeen, and, besides giving courses for "Eğitmen" teachers, wherein, of course, they differ entirely from English practice, they have a strong agricultural and domestic bias.

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* The figures and following two paragraphs are printed by permission of *The Times Educational Supplement*, see K. R. Maxwell-Hyslop; *The Turkish Educational System*, T.E.S., June 13, 1942.

† In 1941 there were 5,200 "Eğitmen Schools," in 1942 5,301.

Although the development of a universal system of primary education, for a large agricultural population both of children and of adults, in which the theoretical and practical must be blended, has been the greatest task which the educationists of Turkey have had to face, both secondary and technological education are being vigorously developed. In the former, in which opinion is tending towards mixed rather than single sex schools, emphasis is laid upon foreign languages, sport, and physical education, and a general education of three years (twelve to fifteen) at the Orta Okulu (or middle school) is followed by three further years (fifteen to eighteen) at a Lycée, which is sometimes in the same building as the middle school. In order that Turkey may be able to develop her own industries, the extension of technological education, particularly in the training of engineers, is today regarded as an extremely important part of the educational system, and the Minister is assisted by an Under-Secretary who devotes practically all his time to the general problems of technological education. There are three main groups of technical schools, each consisting of three stages. Boys in the first group can become "Yüksek Mühendis" or first-class engineers, and in the second or middle group, where the education is less academic in character, second-class engineers. From the third group the boys enter the building trade, and at their craft schools specialize in building and carpentry. A certain amount of interchange between the three groups is possible, and industry can be entered from all stages. A particularly interesting and admirable feature is that the boys in the technical schools are taught to make objects which are actually used in teaching or for the equipment of other schools and colleges.

Parallel provision has been made for girls with special attention paid to the domestic arts and child welfare. The Girls' Domestic Science School at Ankara is divided into two sections, and has now 1,000 pupils, of whom 300 are being trained as domestic science teachers. In the first section, girls of twelve to seventeen years, coming from primary schools, receive, as part of their general education, a full training in all branches of domestic science. Others come from the Lycées at a later age, and take a concentrated domestic science course. In the second part of the school, girls of seventeen, drawn from all parts of Turkey, are trained as qualified teachers in three years. The departments of the school include cooking, laundry and dressmaking (most of the work being done to outside orders), and a nursery forms part of the child welfare section.

Practically all branches of commercial and technical education are also covered by evening classes, and the remoter country villages are able to take part in a scheme whereby special itinerant teachers give courses of practical instruction in blacksmithery, carpentry and domestic subjects to the adult villagers.

The Universities of Istanbul and Ankara now comprise all the usual faculties of a modern University. There are also at this level of education advanced agricultural and engineering schools, commercial institutes, a State academy of fine art, and a school of music and drama. The Gazi Institute of Education trains prospective teachers for secondary schools and prepares them for a highly specialized diploma in education. Other primary and secondary school teachers take a three-year course of training, which includes a minimum of three months' teaching practice.

This article has attempted nothing beyond a purely historical survey of the development of the Turkish educational system up to the present day. An authoritative definition of its content and purpose is to be found in various speeches of the present Minister, Bay Hasan-Ali Yücel. He has said that "the outstanding feature of the Turkish educational system is its secular character. Personal belief is purely a question of conscience, and the Government has nothing to do with the moulding of an individual's conscience, which should be allowed a free and natural development in the dynamic creativeness of life. . . . Education may be defined as suggestion and influence directed to the purpose of bringing up men and women who will be capable of contributing to the whole community. This principle must be the source of practical ethics and idealism. . . . Education in Turkey *is* decidedly nationalistic in spirit. To our minds the purpose of nationalism is to revive in our spirits the great feats achieved in the course of the nation's life and our prosperities and calamities of the past, as if all these were things of the present, and to create a passionate love for, and an ardent desire to serve, one's people without feeling hatred for other nations. . . . The fundamental aim of our social education is to give a feeling of attachment to and sacrifice for one's community, so as to allow one to love others. We have a peculiar view of humanism drawn from an analysis of Turkish society. Our conception of humanism does not stay and limit itself at the gates of ancient Rome and Greece; it goes far beyond; humanism is an attempt to compass all mankind which dedicates its creative energy to good purposes by penetrating deep into the haunts of civilization. This view of humanism has led to the introduction of the ancient Greek and Latin languages into the curriculum of our Lycées, and we have set up in the Universities special courses for such ancient languages as Hittite, Sumerian, Egyptian and Sanskrit. In excavations we search for the remnants of Hittite as well as Greek and Roman civilizations with the same scientific curiosity, and we attribute equal importance to the teaching of these historical subjects."

It is not surprising, therefore, to find that the provision and improvement of the State museums is regarded as an integral part of the education services and is thus the responsibility of the Ministry of Education. Lately, great efforts have been made to establish and improve more local museums, which can be used both to house the finds from recent excavations and also to explain to both children and adults the significance of the remains of the successive civilizations from the Hittite onwards, whose ancient cities and monuments can be seen in rich profusion in many parts of the country. Many foreign students have had occasion to be grateful to the Ministry of Education for this enlightened policy. The personal interest in this aspect of education shown by Atatürk was responsible for the foundation of the Turkish Historical Society, whose International Congress of Archæology at Istanbul in 1937 will be remembered by all who had the privilege of attending. Today the Institute of Turcology at Istanbul, the Chair of Byzantine Art and Archæology (held by Professor the Hon. Stephen Runciman) and the facilities afforded for the study of archæology at Ankara are welcome signs of the times.

This article may appropriately end with a further quotation from the Minister of Education : "One of the most outstanding issues our Republican régime must face is that the Turkish community must become a member of Western civilization, which has made such great strides, especially in the course of the nineteenth century, in the fields of scientific, economic, industrial and technical achievement. This problem is not new to us, since Western civilization has long been a source of inspiration for our intelligentsia and some of our politicians. Nevertheless, in the course of the long years those who have tried to give impetus to the movement of Westernization have not been as capable as the leading men of Atatürk's Republican régime of grasping the meaning of Western life and of finding out the spiritual potentialities and inner propensities of the Turkish people. . . . The spirit of the Republican régime has given a new direction to the historical process from the point of view of conception and creativeness. . . . We may now clearly say that there remain no obstacles, either social, political or economic, to making the Turkish community an organism of modern civilized life. In this new atmosphere, in which imitation has been replaced by creativeness, our educational system, as is the case with all public services, tends to mirror the Turkish revolutionary spirit."

Whatever opinion the English mind may form of some of the emphasis and conceptions of education revealed in these quotations, there can be no doubt they are the expression of an extremely vigorous national spirit, which should have profound consequences for good far beyond the geographical boundaries of Turkey.

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NORTHERN TURKEY AND MEN OF THE WEST

By I. E. Jago

(Director of the British Council's work in the Black Sea area of Turkey)

When you see the calm blue summer waters of the Black Sea you find it difficult to imagine that in winter this stretch of water does really deserve its gloomy name. The forerunners of the wild winds of the colder season are the quail which fly south from Russia and fall exhausted in the streets of Turkish towns, where they are often gathered up in cagefuls by the children.

The shores of Anatolia rise up in a steep forbidding wall, but are mantled over with luxuriant green, which fades away as the traveller pursues his journey southwards to the heights of the central plateau.

Famous in the past has been this coastal region. Here Mithridates held sway over his maritime empire. Not very far inland the tombs of long-dead kings perforate the fantastic rocks of the dark mountains hemming in the quaint, minaret-diademed old city of Amasya in its green and pleasant valley. A crumbling wall of ancient Amysos stands out on a hillside above the port of Samsun. Sinop is still inhabited, and covers a queer neck of land connecting a sea-girt mountain promontory to the shore. Further east, Trabzon clusters round its two deep valleys. Poetry has sung of the "Golden gates of Trebizond," and still you may see the crumbling castle of the Comnenus Emperors rising above an awesome cliff, and from its walls you may see the graceful minarets of the "Hatuniye," a mosque built by the tomb of a sultan's mother.

Do not imagine that this region slumbers amidst antique dreams and things of long ago. It fulfils an energetic rôle in the life of the Turkish Republic of today. Although its towns are none of them very large, it is one of the most densely populated areas of the country.

A few hours' sail from Istanbul is Zonguldak, set in a beautiful site of bush-covered hills. This is the coal-mining centre of Turkey, and coal dust lies thick in its streets. A three hours' railway journey inland are the steelworks of Karabük, lying down in the depths of a valley amidst towering hills. About halfway along the coast is Samsun, the largest Turkish town on the Black Sea. It was here that Kemal Atatürk landed when he came on that historic journey which was to result in the liberation of Turkey and the establishment of the Republic. You may still see the room in which he slept, and in the public library are several books which bear in their margins notes written by his hand. All around are fields full of tobacco leaf, and in the warehouses lies some of the finest cigarette tobacco in the world.

Further east is the town of Ordu stretched along the coast at the base of an enormous hill. Here the hazel-nut country starts. The bright, soft green of the plume-like nut-trees gracefully bedecks the hill slopes which dip down to the sea. The centre of this region is Giresun—"Green Giresun" they call it—and a charming, quaint little spot it is, a meeting-place of hills and sea and verdure. Then comes the historic city of Trabzon rising sharply up on its steep slopes. Grey old houses clamber over hill and valley, the walls of the past loom up near a magnificent secondary school and a fine new hospital, symbols of the present. The mountains stretch away eastwards to Rize, which, for some strange reason, enjoys a semi-tropical climate and produces tea and oranges and rice. From thence the ramparts of the Caucasus slant away to the Russian frontier.

This is a fine piece of coast scenery, but it does not enjoy the world-wide celebrity of the shores of the Bosphorus, nor does it attract the tourist so much as do the baths, mountain slopes and antiquities of Bursa. However, to this northern shore many a Westerner has come to work side by side with the Turkish population. Some years ago there were French and Belgian mining engineers at Zonguldak. At present there is a fair sized community of British engineers and other technicians working at the Sümer Bank Steelworks in Karabük. In Samsun two important American tobacco companies have offices and warehouses. At present an Englishman is in charge of the affairs of one of these companies, which purchases Samsun tobacco to be transported to the States, and there mixed with the Virginia variety. Not long ago there was a British Consulate in this town, and there is still an Italian one there. Trabzon used to be the principal town on the Turkish coast of the Black Sea, and even now it possesses the greatest number of foreign consulates of any town in northern Anatolia. The British Consulate is a very pleasant white building rising above a steep terraced garden which almost seems to be suspended over the sea spreading out far below. Then there are the French, Dutch, Italian and Persian Consulates. Until recently there was a very large German one, but this was closed when Turkey broke off diplomatic relations with the Axis. The staff burnt so much waste paper on this occasion that they set fire to the outhouse. There are some Swiss families in the town, and from time to time British engineers have gone further east to inspect the copper mines near the Russian frontier.

In addition to consuls, technicians and business men belonging to the Western nations there have been representatives of British and American educational organizations in this part of the country.

Once there was an American Mission College at Merzifon, about fifty miles inland from Samsun. A great many Turkish children learnt very good English there. The college was closed down a few years ago. It appears that at the end of the last century American missionaries had made plans to start teaching English in a number of places in northern Anatolia.

In the summer of 1941 the British Council decided to encourage a desire to take English lessons which had been manifested by some of the inhabitants of Samsun. A member of the British Council staff arrived there in July, and early next month an

English course was started in the local Halkevi This word means "house of the people The Halk Party founded by Kemal Ataturk instituted these in order to create, all over the country, centres for popular education, social welfare and general culture In many a Halkevi evening classes are given in modern languages In the case of the English classes given in Samsun, a Turkish teacher, who has since become head of the Halkevi, rendered extremely useful help and advice His grandfather had been a military doctor at the time of the Crimean War, and had been awarded a number of British medals An assiduous student is the sixty year-old librarian of the principal town library, who keeps his English books on his desk so that he can profit by quiet intervals in the course of his work to learn some more of our language

The next summer two lectures were delivered in English, and each subsequent summer members of the British Council staff have gone there in ever increasing numbers to give public lectures Samsun has been visited by British agricultural, athletic, and medical experts who have lectured and gone on tours of the farms, sports grounds or hospitals of the locality Exhibitions of British scientific achievements and educational institutions have drawn large numbers of people

All through the summer of 1942 the German hordes were pouring across southern Russia The wind wafted the sound of pounding guns over the sea to the Turkish port of Sinop peacefully girt by the sunlit sea While on the northern shores the swastika was carrying its message of hate and cruelty, the friendship and desire for mutual understanding implied by Anglo-Turkish relations were being quietly but steadily developed on the southern shores Every Sunday the Union Jack floated out over our Consulates in Samsun and Trabzon, and on week days Turkish teachers and officials went to their English lessons in the Samsun Halkevi in the calm light of the evening

From Samsun the work of the Council spread to Trabzon A keen and capable teacher of English in the secondary school there started to correspond regularly with the British Council and organized an English course in the local Halkevi He received enthusiastic support from a very progressive and energetic headmaster and from his fellow teachers, one of whom was accused of pushing his desire for knowledge to the point of learning English in his bath Last summer some members of the Council staff lectured to large audiences in Trabzon Halkevi A well known Scottish footballer refereed a match between two of the leading sports clubs of this historic town The staff of the very up to date secondary school has accorded such a warm welcome to British culture that it will not be out of place to describe this splendid building here

It is situated on the edge of the town between green hills and the sea It is spacious and so constructed that it admits the maximum amount of light and air From the windows of its long corridors you look out across the waves It possesses an excellent gymnasium and well-equipped classrooms devoted to the study of scientific subjects and the fine arts as well as general subjects A large number of boarders from all over north eastern Turkey come here This school, which stands high in sports achievements, is indeed ideally situated and constructed

Let us now take a glance at the western section of the Black Sea coast Several miles inland from the port of Zonguldak lie the steelworks of Karabuk A few years back there was a British school there, which was attended by the children of English technicians Two British teachers worked there in spite of the difficulty of obtaining suitable accommodation The works have not been there very long, even now, although very comfortable houses and a good hotel have been built, the town is not really large As the months went by a number of technical books and periodicals were sent by the British Council to the engineers in Karabuk and the neighbouring mining centre by Zonguldak An English girl has just started giving lessons in Karabuk Halkevi, which is the third in northern Anatolia to organize instruction in English on a large scale

It is to be hoped that the interest shown by the people of this delightful district in our language and country will encourage English people to visit this relatively little frequented part of the world

THE CHINACLAY INDUSTRY IN MALNAD

By a Correspondent

Refined kaolin, commercially known as chinaclay, has an important place in the list of mineral products which contribute to human comforts as it provides numerous articles needed for our day-to-day life. That chinaclay is used in the porcelain and pottery industry is well known. But the quantity used in that industry forms only a very small percentage of the total quantity consumed in other industries. By far the largest quantity finds its use in the manufacture of various classes of paper, where the high-grade chinaclay acts as a filler. As a sizing material it is largely used in the textile industry. Slightly inferior varieties are used as stiffeners in the manufacture of linoleum, artificial leather, oilcloth, rubber goods, celluloid goods, etc. Lightly tinged varieties are used in the manufacture of ceiling whites, distempers and other pigments. Superior quality chinaclay is also used in small quantities for medicinal purposes. Thus, it is clear that chinaclay has many uses, and there is no need to exaggerate or unduly emphasize its importance in several of our industries.

High-quality chinaclay used to be imported till recently from foreign countries. But the general fall in its import ever since the beginning of the war has created a need for the product in many of our indigenous industries. During the past few years several of the reported occurrences of high-class chinaclay deposits in India have been re-examined, opened out, and their qualities tested. Washing and refining plants have also been created at several places and the finished clays obtained from these refineries are being sold in the market.

In Mysore, workable deposits of high-grade kaolin are distributed in many parts, both in the maidan as well as in the malnad districts. At present only two or three deposits, situated in the Bangalore and the Kolar districts, are being worked on a commercial scale. Recently, those near Bageshpur in the Hassan district have been taken up for mining and refining. All the deposits in the malnad parts have been left practically untouched. After the setting up of the Mysore Paper Mills at Bhadravati, which consumes a large quantity of chinaclay, the kaolin deposits of the malnad were taken up by this department for intensive investigation in 1938, to ascertain if any of them could serve the purpose of the factory. The results of the prospecting, mining and levigation experiments which were thus conducted, near Thirthahalli and Narasimharajapura, indicate that there is a bright future for the development of the kaolin industry in the malnad, as will be described in this note.

Kaolin deposits occur in malnad in the Thirthahalli, Sagar, Koppa, Sringeri and Narasimharajapura taluks. These form parts of the Shimoga and Kadur districts and consist mostly of dense forest-clad hills interspersed with small paddy flats and areca gardens—characteristic features of the malnad. Deposits of kaolin, where found, are usually seen at the bottom of cliffs abutting such fields or gardens or on the banks of small watercourses.

In searching for kaolin we may say the occurrence of laterite or lateritoid soil, capping the softer reddish yellow and grey kaolinized rock, indicates its existence not far below. The presence of small nodular lumps of soft white clay at the margins of paddy fields or along the narrow ledges bordering areca gardens, brought up by burrowing insects, is another sign of the occurrence of kaolin in the area. The local people use small quantities of kaolin for whitewashing their houses, and they would be often helpful in locating good deposits of chinaclay.

Kaolin deposits occurring in the malnad parts may be grouped into two broad categories—namely, those derived from the alteration of the complex of granites, pegmatite and aplite veins; and those formed from the alteration of the pegmatites.

(i) Kaolin resulting from the granitic complex is usually found at depths from

12-30 feet from the surface. Such a deposit is usually covered by a hard lateritic capping underlain by a zone of impure coloured gritty and micaceous kaolin. Locally this is known as "murbu." The zone of murbu grades downward into the yellowish cream or dull white kaolin and also to bluish or greenish tinged varieties which, however, lose their colour, getting bleached on exposure to bright sunlight. In these deposits, here and there, stringers and pockets of remarkably pure white kaolin are also found. On washing, the bulk of the kaolin of this type has a light yellowish white colour and is highly plastic and tenacious.

(ii) Kaolin obtained from the decomposition of the large reefs or runs of pegmatite has a milky white appearance. The deposits of this type are irregular and show a tendency to swell and pinch from place to place. They are usually associated with books of mica, vein quartz and tourmaline—a hard jet black mineral. One of the outstanding peculiarities of this type is the occurrence of pockets of snow white, semi-decomposed felspathic material almost free from mica. This material is comparable to the "Cornish stone" of the kaolin mines of Cornwall, in England. Adjoining the pockets of Cornish stones, large lenses of high-grade, butter-like white kaolin are found to occur. The utility of Cornish stones in the porcelain and pottery industry is well known.

DISTRIBUTION

The estimated reserves of kaolin in the prominent deposits of the malnad, distributed in the taluks already mentioned, would come up to about half a million tons, of which those in the neighbourhood of Thirthahalli may yield in the aggregate about 250,000 tons.

To ascertain how far the kaolin deposits of the malnad satisfy the commercial demands both in quality and quantity, large-scale prospecting, mining, and levigation experiments were conducted by the Mysore Geological Department on the deposits, round about Thirthahalli in the Shimoga district and Narasimharajapura in the Kadur district.

With a view to obtaining some 300-400 tons of levigated chinaclay to supply the Mysore Paper Mills for the purpose of their trial, large-scale mining operations were conducted on the Taleve and Guddekoppa deposits near Thirthahalli and on the Garebyle deposit near Narasimharajapura. After removing the overburden, the exposed band of kaolin was divided horizontally into a number of blocks for mining and the deposit was worked in a series of benches. Altogether a quantity of about 3,000 tons of raw kaolin was mined in the area during the two years 1940 and 1941. The cost of mining, including jungle clearance, earthwork, sorting and transportation of the mined material from the pit to the stacking yard at the mine head, varied between Rs. 4 and 5 per ton of the raw kaolin.

Chinaclay at the bottom of the settling tanks is usually slurry-like and contains 60-70 per cent. moisture. This must be completely removed, and the clay completely dried before it is put on the market. There are two alternative methods of drying.

1. It is the practice in the various kaolin refining plants to subject the slurry-like chinaclay to pressure in suitably constructed filter presses of 12-30 chambers, which reduce the moisture to about 15 per cent. Cakes of chinaclay released from the filter press will be stiff enough to be freely handled. Usually the slurry is pumped on to the filter press by centrifugal pumps specially fitted for the purpose. The moisture content of the cakes is further reduced to 6-7 per cent. by heating them over steam ovens or in special kilns built for the purpose. The whole process is said to take 6-8 hours. The clay leaving the dry chambers will be fit for both storage and despatch.

2. The other alternative method is the ordinary sun drying. This is also conducted in two stages usually. The slurry-like chinaclay is spread over thin beds of dry river sand covered by jute fabric so as to allow a good proportion of the water contained in the slurry to soak down through the jute fabric into the sand bed below. After the chinaclay becomes sufficiently dry it is spread over cement platforms in thin layers and exposed to bright sun for drying. The whole process of sun drying takes 4-6 days sometimes.

As compared with the time taken in the other process—drying with the aid of mechanical devices—ordinary sun drying is a slow process and is entirely dependent on the vagaries of weather. During the long hours of exposure to sun the refined clay is liable to contamination by dust or even destruction by sudden and unexpected showers of rain. This process demands also several handlings, and thereby increases the cost of production, and the output per day will also be limited. Therefore the method of sun drying has nothing in its favour except the low initial capital outlay.

The initial cost for setting up the filter press and steam oven for drying will, no doubt, be high, but the working cost will be comparatively cheaper in view of the fact that in malnad areas fuel is abundant and can be had for a nominal price. Whichever process of drying is adopted, it should be done under cover so as to keep the refined material free from dust at the final stages of drying. In the mechanical process of drying, contamination from outside sources can be effectively controlled, the operations can be conducted under cover, and the output may be increased to any desired quantity. This method is very suitable to be adopted in the malnad or in regions of similar climatic conditions.

Chinaclay at present commands a high price in the Bombay market. There is a growing demand for the high-grade chinaclay in the paper and textile industries and for the production of porcelain and pottery ware. The demand for hygienic white-ware, glazed and ornamental tiles and for the high-class refractory ware, fireclay bricks, crucibles and glass melting pots, etc., has also increased considerably.

The demand for high-grade chinaclay in Mysore alone exceeds at present 2,000 tons per year—the principal consumers being the Mysore Paper Mills, several textile mills and the Government Porcelain Factory. Much of this is being imported into Mysore now. It should be possible to meet this demand for chinaclay at least to some extent.

These deposits being somewhat in the interior of the malnad, they had, so far, not attracted any attention. The construction of a bridge across the Tunga River, near Thirthahalli, the extension of the railway and electrical lines up to Talaguppa with Honnavar as the nearest port on the west coast, and the completion of the ghat road near Hulikal to Cundapoor port from Thirthahalli have considerably altered the situation. The estimated reserves of raw kaolin in the Thirthahalli area are sufficient to meet the requirements of a large-scale washing and refining plant. The market conditions, transport and other facilities are also favourable for starting the chinaclay industry on the banks of the Tunga River near Thirthahalli and at Agasanahadlu on the banks of the Bhadra River near Narasimharajapura.

As an adjunct to the kaolin washing and refining industry in the malnad, a porcelain factory may be started on a small scale at some suitable place where large quantities of fresh water and electric power are available, for making in the first instance cups, saucers and cheap varieties of pottery. This may be developed later, if conditions permit, into a first-class factory for the manufacture of hygienic and sanitary ware, glazed tiles and the porcelain used in the textile mills for which there is a ready and growing market in and outside Mysore. As these articles are not being manufactured at present by any of the existing concerns dealing in porcelain and pottery, the factory, when started, will be the first of its kind.

A separate section for the manufacture of refractories, furnace facings and linings, cupolas, glass melting pots, crucibles, etc., may also be developed from the available raw materials.

WHAT IS GOPHER WOOD?

By C. C. R. Murphy

The legend of the Deluge, one of the oldest in the world, was no doubt founded on the actual story of some local flood of an exceptionally serious character. A favourite theme amongst the writers of ancient days, it is embedded in the mythologies of all the Bible lands, as well as those of China, India, and other countries. In varying forms it has found its way into the folk-lore of many nations, each of which has embroidered it after its own pattern. The Flood story, however, is now generally recognized as having originated in Babylonia. That famous land, lying about the confluence of the Tigris (Hiddekel) and the Euphrates, has always been particularly liable to floods. Every year during the months of March and April it is more or less inundated; and when the rivers rise abnormally from the melted snows and the rain the whole countryside for miles around is practically one vast expanse of water. The inhabitants of this region today are as woefully familiar with great floods as their remote ancestors were. Thus, "the waters of Babylon" meant not only those of the sturdy Tigris and the limpid Euphrates, but something much more besides.

According to the Biblical version of the Flood story, Noah, when the destruction of the earth was threatened, was commanded to build an ark of gopher wood. But what is gopher wood? Is it the name of a particular kind of timber, or simply that of a material? What does the word mean, and where does it come from? The consideration of these matters forms a very interesting study.

The two principal forms of the language spoken in Babylonia were Akkadian and Sumerian. The first derives its name from the city of Akkad, or Accad, as it is spelt in the only place in the Bible in which it is mentioned; and the second, from Sumer, or Shumer, which is the land of Shinar, referred to in the same verse. Shinar was Babylonia. The Flood story, as told in the Old Testament, is essentially Babylonian. It is, of course, a legend, and we are running no risk of giving offence if we say that the Ark was a fabulous vessel, built by supernatural agency. The licence of legend allowed that famous houseboat to be a dwelling-place almost as wonderful as Jack's magic beanstalk of our nursery days.

The Akkadian word used to denote the material from which the Ark was made is *gipar*, the primary meaning of which is not a kind of wood but a reed, withy, or osier. The coracles that plied on the waters of Babylon were also described by the ancients as having been built of *gipar*.

Until a few years ago most of the ferry and transport work on the Tigris was done by means of these coracles, and by rafts of inflated skins, known as keleks. The Arabic name for the former is *quffah*, pronounced guffah by the local Arabs, and in the mouths of Englishmen goofah. The resemblance between goofah, gopher, and kopher (Hebrew, pitch), is certainly tempting; but is the resemblance due to a common element, or merely accidental?

This coracle, of probably the most ancient type in the world, is a large round basket covered with pitch. The ribs of the basketwork are made from palm branches or twigs of willow; also from those of the pomegranate and mulberry in localities where they grow. The outer basket covering consists of the fronds of the palm, the whole being sewn together with cords made from coconut husk fibre imported from India. Originally these cords were made from date palm fibre. The whole coracle is then "pitched within and without with pitch," in which—incidentally—blue beads are often embedded to ward off the evil eye. All the materials necessary for the construction of a guffah are therefore to be found on the spot.

As regards picturesqueness, the guffah is to Baghdad what the gondola is to Venice. In plan, it is circular with an incurving lip, and varies in size from that used by fishermen to the leviathan of twenty feet or more, capable of carrying sixty passengers or ten tons of merchandise. Therefore to people living in Babylonia the idea of a vessel of the size of the Ark of Noah and built of osiers would not have seemed so fantastic as it might to us. The guffah is still characteristic of the upper reaches of the Tigris, but is seldom seen above Samarra or below Kut; they are also being used on the Euphrates. Many a time have I sat on the banks of the Tigris and watched these ancient coracles drifting by in the trance of antiquity.

The outstanding feature of interest of these quaint basket-boats is their immense age. The guffah of to-day is made to the same pattern and of the same materials as it was thousands of years ago. Perhaps the earliest known reference to it is contained in the legend of Sargon of Akkad, whose mother put him when a baby into a basket of reeds and cast it adrift on the waters of the Euphrates, which bore him towards Akki. Sargon, who apparently survived this ordeal, was the first king of the Akkadian dynasty, and the capital city of Akkad is believed to have been situated about twenty miles south-west of Baghdad, and not far from the Yusufiyah canal. Hereabouts, the Euphrates in those far-off days flowed a little to the east of its present course.

The writings of Herodotus contain a description of the guffahs on the Euphrates, but unfortunately that famous chronicler has confused the guffah, or basket-boat, with the kelek, or skin raft. The two words are almost histories in themselves. Both of these types of rivercraft, that were in daily use when Akkad was one of the greatest cities of the world, were still to be seen when I was last in Mesopotamia. On the Tigris keleks were being used for down-river transport below Diarbeker, bringing great quantities of brushwood and other goods for sale in Baghdad. On arrival, the owners let the air out of the skins and take them back for the next trip. Very light of draught and easy to make, the kelek can ply on waters that are too shallow for even the smallest steamer. In Persia, some of the ferry work is done by means of the kelek, and I have often availed myself of this agreeable if leisurely method of conveyance.

The legend of Sargon takes us back to 2600 B.C. How long before that period the guffah had been in use is quite impossible to say. An illustration of one is to be found on a slab, now in the British Museum, from the palace of Sennacherib in Nineveh.

A great authority* states that the word used for the Ark in the Flood story also means a box, and at first we might be disposed to infer that the houseboat in which the narrator committed Noah and his noisy company to the flood was merely a large *shakhtur*, the flat-bottomed barge like a packing-case often to be seen drifting down the Euphrates with its passengers and cargo. But the *shakhtur* is built of wooden planks, whereas the Ark was made of *gipar*, which in so large a vessel would take the form of stout hurdlework. On the principle of wattle and daub, but using bitumen instead of clay, the whole structure would then be thickly coated with that substance to make it watertight. No doubt this was the reason why Noah was specifically commanded to "pitch it within and without with pitch."

The face of lower Mesopotamia has not changed materially since the days of Nimrod. It has always been a land of reeds, not forests. It produces no timber suitable for ship-building, nor is there any evidence to show that it has ever done so. When the Jews sat down by the waters of Babylon, weeping over their captivity, we are told that they hung up their harps on the trees there. Those trees were probably willows. There were also no doubt some small poplars (*gharab*), low tamarisks (*tarfah*), and planes, with a few sumach bushes; but as for the cypress, the pine and the cedar, with which by conjecture alone the "gopher tree" has been severally associated, there was probably not a single specimen in all the land. It may therefore have been that Noah was commanded to build an Ark, not of gopher *wood*, but simply of gopher, the materials for which were indigenous to the country and ready at hand. That would have been a perfectly legitimate and probably closer translation.

The early decipherers of the Babylonian cuneiform of course knew full well the primary meaning of the word *gipar*, but naturally they could not conceive a vessel of the size of Noah's three-decker being built of such material. They got over the difficulty by using the Hebrew form of the word *gipar*—namely, gopher—to denote a particular kind of wood. The compilers of the Vulgate, stepping out boldly into the unknown, gave the rendering: *Fac tibi arcam de lignis lævigatis*, "Make thee an Ark of *smooth* wood." The translators of the English Bible, in their literary masterpiece, followed the Hebrew text. They called this mysterious product "gopher wood," and the phrase thus coined will stand for all time.

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* Yabuda, in *The Language of the Pentateuch*.

HINDU NUMERALS

A REPLY

MR. KINCAID's note on this subject at p. 95 of the *Review*[*] does not tell the story quite completely or quite accurately. On the authority of a French dictionary or encyclopedia, of which he gives neither the date nor the authorship, he states that the prototypes of our modern numerals, coming from India, were known to the Romans early in the Christian era. There are very strong reasons to doubt the latter part of this statement. It is beyond question that, although, as he says, we speak of them as Arabic numerals, they really were invented by the Hindus, and the early Arab authorities themselves assert this. Mr. Kincaid, however, maintains that the prototypes of our forms and those of the modern Hindus were known to the Romans by the third century A.D. The authority quoted by him has apparently relied on MSS. of a work by Boëthius (who was killed in 525 A.D.), which give the forms of the numerals reproduced at p. 96 of Mr. Kincaid's article. Since the discovery of those MSS. in the seventeenth century they have been much discussed, and the various views held about them are well summarized by Sir E. C. Bayley in the *Journal of the Royal Asiatic Society*, 1882-3, with copious extracts and references. As the earliest manuscripts of Boëthius date from the eleventh century A.D., or 500 years after his death, any forms given in them are doubtful evidence as to what he actually wrote, and a comparison of those forms with the shapes used in India from the beginning of the Christian era, given in Table IX of Bühler's *Indische Palæographie*, show at once that they correspond with Indian forms of the ninth century A.D., or even later, and are markedly different from those used in the sixth century though derived from them. Moreover, as Bayley and other writers have shown, the subject matter of the portion of the MSS. which contain these figures is probably not the work of Boëthius, but is a much later interpolation.

If the Romans really knew the Indian forms of the numerals 1 to 9 it seems strange that the knowledge died out and that their own more clumsy method persisted alone. About two centuries after the death of Boëthius the Caliph Walid (705-715 A.D.), while he forbade the use of the Greek language in the conquered western countries, maintained the use of Greek letters as numerals in the public accounts because the Arabs at that date had no numerals of their own. But sixty years later, in 773 A.D., a book was presented by a Hindu king to the Caliph Mansur, from which the Arabs learnt the Indian forms of numerals and adopted them with modifications. This led to the use of them in Europe generally. The change was stimulated by the fact that the system also included the use of the zero, and the notation of place value; neither of which in the eighth century was in use in Europe. Bayley thinks *that possibly the Greeks, whose method of using letters to denote numbers was less* cumbrous than that of the Romans, had stumbled on the notion of a zero in representing high numbers, but if they did they made no use of it to work out a system of place notation. In the ancient Hindu system as in others, 10, 20, 30, etc., were represented by separate symbols or letters, so that the number 3333, for example, would be represented by the four different symbols for 3,000, 300, 30 and 3. It was probably about the sixth century that the Hindus, adopting the sign of a dot or small circle for zero, began to work out the idea of place value. To this symbol they gave the name *sunya*, or "void," which the Arabs translated by *sifr* with the same meaning. That word, by corruption through different methods of transliteration, has given us both "cipher" and "zero." About 820 A.D. the Indian book referred to was abridged by Al-Khwarazmi. The latest writer on the question, Dr. W. F. Clark, in the *Legacy of India* (1937), p. 359 *sq*., supports the view that Indian numerals came to the west through the Arabs, but he quotes a Syrian writer as making the earliest (662 A.D.) known mention of Hindu numerals outside India.

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[*] January, 1945.

Mr. Kincaid quotes the names applied by the Romans (*sic*) to the nine numerals. But Bayley points out that they are due to the Neo-Pythagoreans, and are borrowed for the most part from a Semitic source. This is obviously correct in the case of several of them, as appears from a table in Bayley's paper, which gives the names in Assyrian, Hebrew and Arabic. Thus Arbas (4) is the Arabic *Arba'*, Quimas (5) is *khams*, and Temenia (8) is *shaman*. The Indians retained their primitive forms of = for 2 and ≡ for 3 till about 700 A.D., so far as we can judge from inscriptions and coins, and this throws further doubt on the antiquity of the Boethius MSS. Bayley, indeed, suggests that the Neo-Pythagorean words Andra (2) and Ormis (3) came from Tamil words.

It might be inferred from Mr. Kincaid's brief reference to the Abacus that this instrument for aiding computation was used only by the ancients. It was, in fact, commonly used in Europe and elsewhere for addition, multiplication and division till comparatively recently. Bayley conjectures that the use of the zero, and eventually the system of place value, came from its use, and that the Indians saw that in a case like that illustrated by Mr. Kincaid it was simpler to write the unit figure 6 followed by two dots instead of using a more complicated symbol standing for 600, as had been the old practice; just as the Romans wrote DC. for that figure. In England the Abacus was called the "counting board," and metal discs called "casting counters" took the place of balls on string or wires. Thus Shakespeare in *The Winter's Tale*, Act IV, Scene II, makes his clown say: "Let me see: every 'leven wethers—tods; every tod yields—pounds and odd shilling; fifteen hundred shorn; what comes the wool to? I cannot do't without counters." In French at that period *calculer* meant to work out a sum in this manner (from the Latin *calculus*, a pebble, used for the counting) while *chiffrer* (from Arabic *sifr*) was used for working in our modern method. A full description is given in F. P. Barnard's *The Casting Counter and the Counting Board* (1916). He quotes from a large number of books on arithmetic and shows that as late as 1658 an English author wrote: "The feat with the counters would not only serve for them that cannot write and read, but also for them that can do both, but have not at one time their pen or tables ready with them." In France the counters (*jettons*) were used in the public departments up to the eighteenth century. I have never seen the abacus used in India except in schools, but in China it is called the swan-pan and has survived. Tylor in *Anthropology* (1892) writes of "the swan-pan with balls strung on wires on which the native calculators in the merchants' counting-houses reckon with a speed and exactness that fairly beat the European with his pencil and paper."

Mr. Kincaid says that in the Deccan boys learn the multiplication table up to 24 × 24. In Northern India the Banias, as a rule, learn the table to 16 × 16 not only by whole numbers, but also by quarters, so that if a customer wants 5¾ *chittacks* of a commodity at 3¼ annas a *chittack* the Bania can give the cost without having to calculate it. Such problems arise from the fact that the *seer* is divided into 16 *chittacks* and the rupee into 16 annas. A quaternary scale came naturally from the custom of reckoning with the thumb on the four joints of each of the four fingers, and in several Indian languages the word *ganda* means a set of four. There are also words in Hindi for "a quarter less than" (=*paune*) or "more than" (=*sawa*) and for "a half more than" (=*sarhe*). Fifty years ago in the Gorakhpur district rude lumps of copper were more popular for small change than the Government pice, and had a smaller value, roughly 112 going to the rupee. Their value varied with the price of copper, and the bazaar quotation was always in *gandas*—*e.g.*, 28 at par, *paune* 28 for 111, *sawa* 28 for 113 and *sarhe* 28 for 114.

R. BURN.

Oxford.

WATER PROJECTS AND INDUSTRIAL DEVELOPMENT: TUNGABHADRA AND GODAVARY

By a Special Correspondent

The Government of H.E.H. the Nizam has launched a big agricultural and industrial development plan for the post-war era. There are two projects, the Tungabhadra and the Godavary, on which work has already been started.

The Tungabhadra scheme when completed will rank as one of the world's largest irrigation projects, besides supplying more than 100,000 kw. of hydro-electric power. It is proposed to harness the River Tungabhadra at a point where it drains an area of 10,880 square miles. The river receives ample supplies of water from the Western Ghats, where in many places the annual rainfall is over 200 inches. As the major part of the river supplies are only received in the four months of the year extending from June to September, a large storage reservoir is being constructed to regulate the supplies. The capacity of this reservoir will be 800,000 million gallons. The water will be diverted for irrigation in one of the most arid tracts of the Deccan, where the average rainfall is not more than 18 inches. The canal system covers an area of 1½ million acres, and it will be possible to bring under irrigation nearly 750,000 acres annually. The people in this area, who have suffered from scarcity or famine almost every alternate year, can look forward in future to a happy, contented life, without the lurking fear of starvation.

The contributions of this project towards the industrial development are by no means small—over 500 million kilowatt hours of energy can be developed from the falls in the canal. Industries to be served by power are gold mines, sugar, oil mills, etc.; the main programme, however, is to extend the benefits of power to as large a number of small habitations as possible, in order to encourage rural development and cottage industries. The total cost of this project will be nearly 15 million pounds sterling.

The Godavary industrial and agricultural development is more ambitious than the Tungabhadra. It envisages hydro-electric and irrigation development, a new industrial town, a balancing thermal power station and developing an area for industrial undertakings, utilizing the mineral resources which include coal, iron ore, mica, graphite, and limestone, etc. The first 20 million pounds sterling has been set aside for this project. A survey for the purposes of inland navigation of the upper reaches of the Godavary River has also been approved. His Exalted Highness's Government have approved of the scheme, and an organization on lines similar to the Tennessee Valley Authority is being set up.

It is proposed to dam the River Godavary where it drains a catchment area of 35,740 sq. miles. Its canal system will be the largest in the world; the main canal will have a carrying capacity of 30,000 cubic feet per second. The canals cover an area of 3½ million acres, and it will be possible to bring nearly half of this area under irrigation annually. There are drops in the canal which will be utilized for the generation of hydro-power, and from which 750 million kw. hours can be obtained.

Steps are being taken to start immediately a large thermal station at the pit head of coal mines, in order to advance with the industrial development. An order for nearly 50,000 h.p. of thermal plant is being placed in the United Kingdom. This plant will serve as a balancing plant when the hydro-electric power comes under operation, but in the meantime will be used to provide the power for the industries which are to be immediately set up. Some of the main basic industries that are being contemplated are iron and steel works, paper mills, cement factories, fertilizer plant, rayon, plastics, textile and oil mills and the manufacture of consumer goods.

The industrial town which is to be laid out on the banks of the Godavary River has been designed on model lines. The first work to be undertaken will be a housing scheme for ex-Service men, who are expected to take an important part in the work of development. The township will centralize the smaller industries arising out of the development of the basic industries, which will be located in the areas where the mineral wealth is available.

A Conference with the Madras and Bombay Governments for the settlement of the water rights has been rendered necessary. In view of the fact that the Godavary River runs completely through the heart of Hyderabad State for some 600 miles, there should be no difficulty with sympathetic co-operation in settling this question. It is hoped to complete the major part of the ambitious programme within the next decade. It will be as revolutionary in improving the prosperity of the people as any scheme at present put forward in India.

THE ABORIGINAL IN THE FUTURE INDIA

By W. V. Grigson

I will deal here primarily with the aboriginals of the centre and south of India, not with the Assam hill tribes. For their protection the 1935 Constitution provided three safeguards: the partial exclusion from the full operation of Provincial autonomy of certain areas principally inhabited by primitive tribes; the placing on Governors of two special responsibilities for the safeguarding of the legitimate rights of minorities; and for the peace and good government of the partially excluded areas.

A back-bench revolt in the House of Commons led to a hurried revision of the small list of areas scheduled for partial exclusion in the original Government of India Bill. This revision was based on reports obtained from districts and Provinces by the Central Government and sent so quickly to Parliament that there was no time to obtain ethnological opinion or to check district recommendations by local enquiry. The new schedule which became law therefore was not complete: in the Central Provinces and Berar, for example, the partially excluded areas contain only 833,000 out of nearly three million aboriginals, and those who are outside these areas are often the worst exploited and most in need of protection.

These special provisions did not deprive Provincial Ministers of executive authority over the partially excluded areas. Under his Instrument of Instruction a Governor was, in exercising his individual judgment as to these special responsibilities, to be guided by his Ministers' advice, unless he was convinced that to accept that advice would be inconsistent with fulfilment of those responsibilities; he was also directed so to use his powers as not to enable his Ministers to use his responsibilities as an excuse for shirking their own. The initiative in the administration of the partially excluded areas rested with the Ministers.

The Constitution empowered Governors to make regulations for these areas, and provided that no law of Central or Provincial Legislatures should apply to them unless the Governor applied it by a special notification, with such exceptions and modifications as he thought fit. These powers, of course, could not help the aboriginals outside the partially excluded areas, whose only tangible Constitutional safeguard was the special responsibility for minorities, and who otherwise had to depend on the paternalism of officials and their own realization of the power of the vote.

Political tempers in India were short when the Bill became law, and Congress and other critics without pausing to reflect on the real purpose and legal consequences of these provisions fiercely attacked the anthropologists accused of having inspired them, and the provisions themselves as intended to remove from ministerial control the rich natural resources of the areas partially excluded, as protecting peoples who needed no protection, and as based on distrust of Indian fairplay towards backward Indians. More moderate critics rightly pointed out that even before the new Constitution British administrators had had no positive policy for aboriginal betterment. The lively controversy that followed stimulated Indian public opinion for the first time to a realization of the existence of the aboriginal problem.

Governors and their Ministers, too, realizing their responsibilities to the tribes and their ignorance about their conditions, for the first time caused systematic enquiries to be made in almost all Provinces into those conditions, and in several Provinces Advisory Boards and special officers or departments for tribal welfare were recommended or appointed. Unfortunately the war and ministerial resignations have prevented very active implementation of the recommendations of committees and special officers. These results of partial exclusion have, however, had possibly quicker and greater effect in several Indian States.

Anthropology has hardly yet begun to be applied to the solution of Indian problems. But as a result of increased attention to its teaching in Indian universities, more research by Indian anthropologists and more interest in anthropology by Indian scientific societies, the political prejudice against anthropologists is lessening, and also there is a growing mass of anthropological data about the tribes to be added to the administrative data as bases for formulating a positive policy.

There is now a danger of Constitution-makers dropping the present Constitutional safeguards, forgetting the aboriginals and leaving them again to *laissez faire.* The time therefore has come to appoint an Indian Royal Commission to synthesize existing data, take stock of tribal conditions and formulate an active betterment policy for the future. Such a Commission must naturally take into account Russian measures in Central Asia and Siberia, and their results.

The new policy must aim at building up the beginnings of economic as well as political democracy among the primitive tribes, the former by elimination of middlemen through forest co-operatives, co-operative farms and consumers' co-operatives linked with them. These measures, if they are to remedy the growing pressure on tribal land caused by alienation to non-aboriginals, increase of population, and consequent reduction in the size of holdings and loss of fertility, must increase the transfer of tribal labour to mines and factories, where special attention must be paid to their welfare and training. For training in political democracy the formation of group *panchayats* is advocated, only the members of which should exercise the franchise for higher local bodies and Provincial and Central Legislatures.

PYRETHRUM CULTIVATION IN KASHMIR

By Thakur Harnam Singh Pathania

(Chief Conservator of Forests)

From a few seeds imported from Vilinorin in 1936 the Forest Department of Kashmir has been able to extend the cultivation of pyrethrum to over 2,000 acres of land in the year 1945.

Pyrethrum plant has been known since many decades as an important source of vegetable insecticide, but it is only during the last twenty years or so that it has attracted special attention, particularly because pyrethrum insecticides are quite harmless to human beings and domestic animals.

There are a number of species of pyrethrum, but only a few contain active insecticidal properties, the most important one being pyrethrum cinerariæ folium (syn.: *Chrysanthemum cinerariæfolium*). In actual appearance it resembles very much the wild daisy.

In 1934 Dr. S. V. Pantambekare, Assistant Bio-Chemist, Dehra Dun, contributed a very informative article to the *Indian Forester* on the basis of his experiments at the Forest Research Institute. Referring to pyrethrum, the author expressed himself hopeful about the possibility of its cultivation in parts of Northern India. Following this the then Chief Conservator of Forests of the Kashmir Government, Sir Peter Clutterbuck, decided to start a plantation on an experimental basis. During 1934-35 small quantities of seed were tried at Baramulla, but the experiment was a failure. These seeds were possibly of Japanese origin. Later, a small quantity of seeds was imported from Vilinorin, Paris. Mr. Prem Nath Kohli, in whom the Department has a practical botanist, tried this seed under different conditions of soil moisture and shade, both in nursery beds and small pots with different media of soil constituents, etc. Though, as later experiments proved, the seed was not of good quality, Mr. Kohli succeeded during 1936 in obtaining a few plants which thrived well at Baramulla. During the following years these plants gave some flowers and seeds. Efforts were then concentrated on acclimatizing the plant and obtaining sufficient seed locally. Thus the Forest Department had independently taken up experiment on pyrethrum, even before the Council of Agricultural Research in India decided in 1937 to experiment on its cultivation seriously.

In 1938 the Forest Department took steps to grow the plant on a commercial scale. The Kashmir Government provided adequate protection of the plant against smuggling by making the provisions of the Kuth Act applicable to pyrethrum as well.

The active principles in the flowers produced in the State compare favourably with those of foreign countries. The products find a ready market. With a view to establishing this industry on a sound footing, various details are under further investigation in order to obtain the maximum out-turn of flowers per unit area and to standardize the process of flower collection so as to ensure the maximum percentage of pyrethrine (the active principle of flowers) compatible with a given weight of flowers. The area under pyrethrum has during the five years increased from 322 acres to 2,100 acres; the sale proceeds have gone up from Rs. 3,600 to nearly Rs. 200,000.

The Forest Department has an ambitious scheme in view for extending the cultivation of pyrethrum. It is intended to bring bare uncultivable slopes under pyrethrum cultivation. It will also be possible to induce the cultivators to plant pyrethrum on second and third grade agricultural lands as it will bring them higher returns than the cereal crops. The Department had to abandon its original plan of encouraging pyrethrum cultivation on agricultural lands owing to the outbreak of the war and the consequent pressure on land for the production of more food grains.

The expansion of pyrethrum cultivation in Kashmir during the war has been very helpful in a number of ways. Kashmir was the principal supplier of pyrethrum to the Government of India for medicinal and other purposes during the last few years when supplies from foreign countries were cut off. All the out-turn was and is being supplied to the Government of India at concession rates, to meet the requirements of the Army. It is a matter of genuine pride for the Forest Department of the State that it was able to help the Government of India tide over the acute shortage of pyrethrum insecticides for war and civilian purposes.

The Forest Department has been confronted with a number of new problems with the introduction of this very useful exotic plant. Rat damage, for instance, is a serious menace on the high-level plantations, while certain insects attack it in various places. With further experiments it is hoped that this problem will be solved and the industry established on a firm basis.

SILHOUETTES OF INDO-CHINA

1. FISHERMEN ON THE ANNAMESE COAST

By E. W. Hutchinson

Mr. Gustave Langrand, formerly of L'Institut de la Providence at Hué, the Emperor's capital, carried out during the pre-war period a study of the Annamese fishing community. The data for this study were collected by him while staying with a friend at the Oceanographic Institute of Nha-Trang, a resort on the coast midway between Hué and Saigon. The fruit of this research, compiled in 1937, gained him honourable mention in 1941 from the Literary Faculty at Lille, together with a prize from the French Maritime and Colonial League. This year it has been published by *Editions Univers* in brochure form (110 pages, in small type), accompanied by thirteen illustrations and two sketch-maps, the majority of the photos having been supplied by the courtesy of the Oceanographic Institute.[*] The contents, both text and pictures, is of more than ephemeral interest for ethnographists and students of social economy. A wider public would also subscribe if, as we hope, it may be possible to reproduce the subject more fully in book form later on with the inclusion of an index and a complete bibliography. By that time perhaps the study can be brought up to date in order to incorporate information (at present unavailable) concerning the effect produced by events of the past six years upon an essentially patriarchal and unpolitically minded community. We recognize in Langrand's fishermen, as in Gourou's farmers[†] the Annamese we knew before the war, but shall we find them unchanged when we meet them again next year?

A general impression is now prevalent that the pre-war colonial Empires will have to be brought into line with the new world-situation, and *L'Univers* has devoted the whole of its October number[‡] to the future of the British and French overseas Empires, giving much attention to the "Trustee System" advocated by Sumner Welles and to de Gaulle's *L'Union française* as steps in the direction of Dominion Status. France promises to eliminate any subordination of the colonies to the status of mere producers of raw materials, or of manufacturers and selling agents of their produce. Instead, the colonies are to be guided to develop their own riches for the common good. Under this scheme the main duty of the Protecting Power is to afford guidance and to watch over the foreign interests of its dependencies. The French Union is to consist:

(*a*) Of France in Europe.

(*b*) Of French settlements overseas—*i.e.*, Algeria, the Antillies, Guyana, St. Pierre-Miquelon in the Atlantic—New Caledonia, Tahiti, etc., in the Pacific.

(*c*) Of protectorates—Morocco, Tunis, Indo-China.

(*d*) Of colonies in West Equatorial Africa, Madagascar, Somali, Enclaves in British India.

In Indo-China, the two provinces of Cochin-China and Tonkin (formerly administered directly by France) are now presumably to be merged into the sub-protectorate of Annam, or Viet-nam, as the inhabitants prefer to call it[§]. Annam, Cambodia, Laos (the three components of the Indo-Chinese protectorate), each possesses its own national ruler already. Under the new dispensation the higher administrative posts, formerly reserved for French officials, are to be thrown open to the people of the country, who will thus have effective control of their own administration.

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[*] *Vie sociale et religieuse en Annam.* G. Langrand. Editions Univers. 1945.

[†] *Les payans du delta Tonkinois.* Pierre Gourou. Edition L'art et Histoire. Paris. 1936.

[‡] The October issue of *L'Univers* is entitled: "L'avenir de la colonisation." It is published at 11, Rue des Frères Vaillant, Lille.

[§] "*Viet-nam*" means the Southern Viet, Viet being their ancient name for themselves. The name "*Annam*" was imposed on them by the Chinese to commemorate the first Chinese conquest of Tonkin two thousand years ago, and means "The South at peace."

The declaration of this new policy was announced on February 15 last—the Annamese "Têt" (New Year)—at a time when Japanese Forces were still in control. , Shortly afterwards Japan deposed the French, substituting her own and Annamese Administrators as the result of a suspicion that the French were preparing to stab them in the back the moment they should withdraw their defeated army out of Burma into Indo-China. In this way the Japanese completely undermined the position of the French *vis-à-vis* the Annamese and themselves took on the rôle of protector and adviser which France proposed to adopt in place of her former status of *de facto* ruler. Six months later Japan capitulated; but the allies were unavoidably delayed for some weeks while they changed their troop dispositions before accepting the surrender of the Japanese, whom they had expected to have to fight in Siam and Malaya. This respite enabled the Japanese to hand over equipment to the Annamese and to instruct them in its use against the French in the country, also against landing-parties of the first Allied contingent at Saigon. This explains why the Annamese have so far refused to accept the new French Charter. Nor are they likely to accept it until the Japanese troops are under complete control and French Forces arrive in sufficient numbers to convince them that France has the power as well as the will to set up the new régime. By the end of the year it is expected that the situation will be favourable again for the French. Meanwhile, this explains the disproportionately small space devoted to Indo-China in the October number of *L'Univers*. Were it not for divisions among the Annamese themselves it is probable that those of their leaders now in negotiation with the French would have secured the support of all the dissident groups, thereby hastening the establishment of Allied control throughout Southern Annam: the lack of unity among themselves has been a national defect with Viêt, characterizing their struggle against both China and the Chăm in by-gone centuries. Northern Annam, from Huế to the China frontier, at the time of writing, is in temporary occupation by Chinese troops entrusted with the disarmament of the Japanese. So far the Chinese have avoided trouble with the Annamese by refusing to accept reinforcements from the French outside, depriving the local French of their arms, pending disarmament of the enemy. By the time that operation is complete and the Chinese are ready to withdraw, the French ought to be in effective control of the south with sufficient strength to proceed to occupy the north.

Apart from the Highlanders, whom the Annamese call *Moi* savages, it is safe to affirm that the fishing community is the section of the population least likely to have been involved in the recent tragic events or in any political unrest—if only because of the small part which outside politics occupy in their communal life. The section described by Langrand had but little close contact with the French in 1937. Unlike the urban population, these fishermen carried the responsibility themselves for maintaining order, collecting taxes, etc. The main function of the French in relation to them was to approve the candidates for public service whose names were put forward by the Headman and village elders. In 1937, 1,500-2,000 heads represented the population of the district under review, of whom only 350 were taxpayers. Those exempt from taxation included the elders responsible for submitting the list of proposed public servants. Public service comprised the duties of headman, keeper of the ancestral rolls, policeman, postman, messengers. Remuneration consisted in certain priorities in fishing rights and perquisites, but included no salary. Those exempt from taxation amounted to 75 per cent. of the population, known as the privileged classes. They included the following:

(*a*) All holders of the Mandarin diploma and of two lower grades carrying certain privileges for the holder.

(*b*) All people over sixty years of age, among them the doyen or patriarch of the village.

(*c*) All paupers and infirm persons.

The *Tu-chi* or patriarch—doyen of the community—formerly enjoyed the status and performed the duties now incumbent upon the Headman (elected by the older and important members of the privileged classes with the tacit consent of the whole population); he also officiates at all religious functions. As late as 1937 his prestige remained considerable.

Every taxpayer is subject as well to the corvée of forced labour for five days annually (it can be compounded at the cost of 20 cents per diem)—a survival from mediæval times, when it was held to be an acknowledgment for the benefits of law and order conferred upon the community by the privileged classes. Thus, for official purposes, the community is composed of horizontal social layers which overlap. A vertical division into classes nevertheless exists unofficially, and will become apparent as soon as we examine the homes and occupations of the villagers.

The village contains some 420 dwelling-houses. Fifteen to twenty are of solid materials—brick and tiles, often with a cemented floor. These are the homes of the village nobility—boat-owners, boat-builders and traders, known as *Thô* (bosses). A boss pays the tax exacted by Government for permission to fish; he engages the master and crew of the boat he equips; pays them advances in cash; sells the surplus after the community has received its quota of the catch, dividing the proceeds on a fixed scale.

Next come a certain number of less imposing dwellings—floors of earth beaten flat surrounding the rough house-posts embedded in the soil; thatch roof overhanging plaited bamboo walls; only occasionally with separate kitchen outside. Here live the *Thô-phu*, hired skippers and steersmen, to whom the *Thô* entrust their fishing-boats and tackle.

Lastly come the huts of the crews—for the most part bamboo shanties on the seashore; roof-frame of spliced bamboo, held together and to the house-posts by strips of rattan. The crews constitute the major portion of the population; and their homes, of course, outnumber those of the masters and bosses. Langrand's fishermen appear to tolerate the uneven distribution of wealth with equanimity and without a trace of Marxian rancour. Two hundred tons of fish was the year's catch in 1937, and represented a cash value of Ps. 35,000,* including 12,000 gallons of pickled fish-sauce as well as the fish consumed by the crews. The proceeds are divided as follows by the bosses:

> The boss takes 15 per cent., representing interest on his invested capital.
>
> He takes another 37 per cent. as owner and organizer of the fishery, paying Government licence, etc.
>
> *The staff:* 6 per cent. is divided among master and seller, 4 per cent. is divided among helmsman and clerk, 38 per cent. is distributed as wages among the crew.

There is *no* criticism of the French dispensation which legalises the system. In fact, a parallel is shown to exist between conditions in Annam and South Brittany.

At Nha-trang fish is so abundant that no one need starve. Proletarians, having enough to eat, can take a delight in the warm sunlight, the mild weather and the state of nudity which the climate permits. Langrand gives the following sketch of them:

> "Take a boat one Sunday morning across the bay to where the fisher crews are busy with their nets and admire six or seven bronzed athletes as they land their catch. Two men are tugging on the ridge-rope; the rest have hooked their fingers into the mesh of the net as they pull it in towards them. Their boat rocks in accord with the beat and rhythm of their movement; each lurch seems to bring the gunwale down nearer to the water's edge.
>
> The toilers' heaving chests betray a spontaneous zest for life: every vowel of the *Ho-o-o Ru-it* they intone expresses it through the whole gamut of young, mature and old men's voices. This harmony is in tune with the broad expanse of blue sea—fitting background for the superb play of their muscles in the blinding sun."

In his concluding summary Langrand draws a contrast between the character of the Annamese and western races. He finds an explanation of the contrast in the fact that while the West sails the seas with the object of getting somewhere, the Annamese merely does so as part of his natural existence. Like the Chinese, he lives very near to the soil—"The Good Earth"—which gives him rice, mud for pisé-walls, for bricks, for tiles; the water of sea and canals which gives him fish, carrying his barges, houseboats and sampans, as well as his fisher-craft; the trees, which give the material for fashioning all his implements.

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* About £2,000.

These five elements of earth, water and timber (with the addition of such fire and metal as he needs) give man his mastery over the beasts. In Annam, the elements have even taken on an aspect of the divine. Lest there should be any doubt about this statement, let us pay a visit to the *Dinh* and take a brief survey of the various altars with their offerings of rice and chicken, burning joss-sticks, clouds of incense. The *Dinh* comprises within its precints a Hall of Assembly for the village elders; temples dedicated to the bygone founders of the village and to its guardian angel; monuments also in honour of Spirits of the Five Elements. They are worshipped severally under the names of—

Our Lady of Metal
Our Lady of Wood
Our Lady of Fire
Our Lady of Earth
Our Lady of Water

Observe that the last named enjoys pride of place along with the spirit of the latest stranded whale.* If our visit is on a feast day we shall see paper boats launched upon the sea, perhaps to accommodate the spirits of the shipwrecked. In Annam, no Buddha, no Prophet, no Messiah has ever revealed to the peasant the nature of his relationship with the forces of the universe of whose imminence he is conscious. He finds his escape from them rather in the national theatre than in the mumbo-jumbo of spirit-worship to which his unsatisfactory religion reduces him. Langrand admits that Confucian influence is still to be found at the altar behind the door-screen in every house: here the elder son of the family sacrifices to their ancestors. He was unable, however, to discover any tradition of practical generosity; beneath the superficial varnish of face-saving politeness he could trace no core of human kindness. His criticism of the Annamese in 1937 was that they lack a sense of obligation to their fellow-men. Only during the last three years, however, has their capacity in this respect been tested to the full. The history of Annam under the Japanese incubus has still to be written. Meanwhile, some British internees of 1942 can testify to an unexpected gesture of kindness towards them on the part of humbly situated Annamese lately in their service. These men, when we were interned, came openly to bid us farewell. The marks of appreciative regard which they then showed to us are not likely to be forgotten.

THE STUDY OF EGYPTIAN ART IN THE U.S.S.R.

By Professor V. Pavlov

(Curator of the Ancient East Sector, Pushkin Fine Arts Museum.)

The splendid collections of Egyptian antiquities in the Leningrad Hermitage Museum and the Pushkin Museum of Fine Arts in Moscow are evidence of the interest which Soviet scholars display in Egyptian art. Academician V. A. Turayev and Professor V. S. Golenishchev were among the better known Russian Egyptologists before the revolution. Turayev trained a notable school of Egyptologists,

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*The earliest recorded visitor from Europe commented upon the importance attached to great fishes by the inhabitants even before the Annamese overran Central and Southern Annam—then Champa. *Vide* Henri Cordier, *Les voyages en Asie au xiv^e^ siècle du Bienheureux Frère Odorico di Pordenone, Paris*, 1912.

amongst them the leading Soviet savants, Professors Flitner and Borozdina. Perhaps the most talented was Academician V. V. Struve, whose name is well known to Orientalists today. Struve, in turn, has his own school of Egyptologists in the U.S.S.R. whom he has trained in the traditions of the old Russian scholars: this school is known to the world of Orientalism through the works of Professors M. E. Mathier and I. M. Lurye.

In addition to these Leningrad workers there is also a Moscow group headed by Professor V. I. Avdiyev and the writer. Incidentally those Egyptologists mentioned above are only those whose work is in some way or another connected with art problems. The list of historians and philologists is considerably longer. In the early part of the twentieth century, especially in the early twenties, there was a sharp turn in the matter of Egyptian art studies both in Western Europe and in Russia. Classical Egyptology, during the second half of the nineteenth century, accumulated a tremendous amount of material and made some important discoveries, but still did not recognize Egyptian art as a separate branch of study. This only became possible with the rapid development of art criticism and the application of its methods to the study of the history of Egyptian art. This could be seen at the sessions of Egyptologists organized in 1922 in connection with the centenary of J. F. Champollion's first interpretation of the hieroglyphic inscriptions. The special meeting of the Soviet Academy of Sciences and the Egyptologists' Congress in Moscow that year showed the U.S.S.R.'s lively interest. In the years that followed the study of Egyptian art divided into two main lines—the study of individual or connected monuments and their publication, and works of a correlative nature, which establish the main stylistic features of Egyptian art and its path of development.

The first of these two problems is solved mostly by the museums. The Moscow Fine Arts Museum, for example, resumed the publication of papers (the bulletin "Museum Life," from 1925-1930 and "Museum Transactions," No. 6, 1926, and No. 7, 1939). This publication contained some general characteristics of groups of works of art in the museum galleries such as the articles by Borozdina on "The Monuments of Hellenic Egypt" and "The Monuments of Coptic Egypt," as well as research papers covering a narrow field such as the same author's "Clay Vessels of the Ancient Period," Professor Avdiyev's "The Paintings on the Papyri," the writer's "A Relief Depicting a Group of Mourners," etc. The Department of the Ancient East in the Leningrad Hermitage Museum also published its "Transactions" (Vol. 1, 1939, Vol. 3, 1940), in which appeared two outstanding articles on Egyptian art: Professor Mathier on "Coptic and Ancient Egyptian Magic Female Statuettes" and Professor Lurye's treatise, "Certain Figures on the Papyri Believed to be Caricatures." Many of the works mentioned here raise problems that have not yet been settled either by Soviet or Western European Egyptologists. There is, for example, the interesting theory put forward by Professor Lurye concerning the disputed subjects of the Egyptian "caricatures." Contrary to the more widespread opinion, Lurye regards them as mystery scenes connected with religion. Professor Mathier's treatise of female burial statuettes and his approach to the subject is also of interest. Lastly, my own articles on the exquisite carving representing mourners in relief tried to establish the main features of the Memphis school of the nineteenth Dynasty and to prove that this fragment is part of a huge relief ensemble, other fragments of which are to be found in various museums all over the world. If we probe into the general direction taken by these researches we have to admit that this interpretation, new in principle, has rendered a service to scholarship. Throughout the 'thirties there was a heated and theoretically important discussion concerning the social-historical character of ancient Oriental society.

On the basis of a careful study of the sources, Academician V. V. Struve proved the existence in the ancient East, and particularly in Egypt, of a slave-owning society at its earliest stages. This viewpoint excluded all possible modernizations and enabled us to interpret objectively the whole process of development of one of the oldest cultures. This new view of history was naturally followed by a re-examination of the history of art, which is one of the most important factors in the development of culture. This fact made itself felt in the Egyptian art research of the following decade. A number of problems were raised sharply and objectively in the journal *Egyptian Circle of Leningrad University*, which was founded in 1928. Later the functions of this journal were to a considerable extent taken over by the *Journal of Ancient History* (Vestnik Drevney Istorii), which is contributed to by all leading scholars working in this field. The new journal covers a much larger period (ancient culture in general) and handles theoretical historical problems of great interest. It has also published a number of interesting papers on ancient Egyptian art.

The study of the material that has been collected has produced a number of important summarizing papers. Amongst them is Professor Mathier's "History of Egyptian Art in the Period of the Middle Kingdom" (1941). This book is Volume II of the comprehensive treatise on the art of the whole ancient East, on which art scholars of the Hermitage Museum are working. Mathier has now finished work on a volume dealing with the art of the New Kingdom. The author makes a profound analysis of the Egyptian *objets d'art* in the Soviet museums and has many interesting things to say about the provincial art schools in Central Egypt at the time of the Middle Kingdom. In my two books *Sketches on Ancient Egyptian Art* (1936) and *The Sculptured Portrait in Ancient Egypt* (1938) I attempted to acquaint the reader with the Egyptian art treasures in the Moscow Fine Arts Museum. None of the works on Egyptian art that have been published in the West European countries during the past twenty-five years mention, as far as I know, the Egyptian exhibits in the Soviet museums, although by comparing them with the chefs d'œuvre in the Cairo, Louvre and British Museums much of interest could be added to the history of Egyptian art. This is a gap I wanted my books to fill. The plans for museum publications in the post-war period are sufficiently extensive to acquaint Western European Egyptologists with the examples of Egyptian art that we have in the Soviet museums.

SOME BRITISH I ADMIRE

IV.—SIR FRANCIS YOUNGHUSBAND

By Ranjee G. Shahani

The sun was going down in a blaze of colours. The rash of red bungalows—why are English streets like regiments of soldiers?—was washed over by a gleaming tide of golden air, in which they and their redness were drowned. The lamps were not yet lit; and the stars were asleep. The hour was witching; yet, somehow, I felt irritated. Why? Why must beauty always have a sting? There were gorgeous pink clouds over the harbour; the fields were silent, meditative; and the breeze was like a precious liquor.

It is best to sit and soak; to be passive; to accept. Vain—worse than vain—to try to land Leviathan with a bent pin.

I noticed everything: a child crying; a dog barking; a young man saying the usual things to a young girl; and the waves laughing in glee. I was sad, very sad. All things pass, I said to myself; change is the only unchanging element in the universe. What does the word *is* mean?

Even now, thirteen years later, I don't know. Everything *seems* or *appears to be*. Are we perpetually fog-bound? Surely the sun of truth shines somewhere.

Maya, all is Maya, say the Hindus; and they are no fools. We always mistake the shadows for the substance. We are entrapped in the self like flies in amber.

Is this a peculiarly Indian view? Not altogether. W. H. Hudson, who possessed something of Merlin's fabled power of entering into the life of the not-self, says: "Man, in fact, can never adequately stretch and sharpen his faculties so as to become purely absorbed, as a spectator, in the vast drama of nature's myriad activities, and enjoy it as the one entrancing supreme spectacle, inasmuch as nature has cunningly given to man's vision the illusive perspective of self, and his outlook must always be blurred by this partial lens with its finitely human focus."

Surprising? No. But how can we ever understand anything? Only in one way: we must be emotionally affected by it. In fact, our comprehension *is* largely the emotion that anything excites in us. Feeling and knowledge are inseparable.

All this is not by the way. It has to do with the life and work of Sir Francis Younghusband. He was not an impassive observer of life and the cosmos. No, he had established a relation with them. Of what kind? We shall see as we proceed.

* * * * *

Sir Francis was not one of those men who, in Shakespeare's words, "smile and smile. . . ." Indeed, charm, in the conventional sense of the word, he had not. He was apt to be gruff and somewhat aloof. Also, when in the company of old familiar fakes, he spoke in grunts. He was at his best—so at least I felt—during a quiet chat by the fireside. Then he seemed to throw away his armour and relax. One realized at once that he was a transparently sincere man: he said what he felt and he did exactly what he thought. On the very first occasion I met him—that was in 1932—he spoke of stainless and boundless peace; of space unlimited; of untrodden snow; of wild flowers that blushed unseen; of the virgin hills whose tips kissed the distant stars.

Slowly, gradually, as he talked of his beloved Himalaya, one understood that he was somehow different from other Englishmen. The plain fact is that he was an adept who, having achieved mastery over his own psychic content, could change a life by a touch of the hand or by a muted whisper. Few were aware of this aspect of his personality excepting those who had received the regenerating shock from him. Here we enter the sacred domain of saintliness—existence illumined by and dedicated to active goodness. Such a triumph—triumph because goodness, unlike genius, is not a gift from the gods—goes beyond greatness and the noise of temporal fame. It is, in essence, the relating of the broken rhythm of life to the Perfect Rhythm that runs through all things. This is where man touches the height of his experiment upon this tormented planet of ours. It is foolish to dogmatize in these matters, but it seems to me that Sir Francis made his way up God's holy hill by a path all his own.

There are, roughly speaking, two kinds of thinkers: the creative and the constructive. To the first group belong, among others, Shakespeare, Goethe, Ibsen and Turgenev, who think through the act of creating. We do not ask these writers for true ideas, but above all for suggestions as to how thought works with various people at various crises. We expect them to make us feel how human beings reason not only when they are at leisure, but when the vicissitudes of life shake them to their foundations. More than that, we look to these great spirits to unite us to our fellow-men in sympathy and a kind of indulgent comprehension. The authors who preach, exhort, or wish to nail us down to narrow conclusions appear less divine than these masters. In brief, creative thinkers are those who do not believe in partial truths, are not dominated by theories, and do not let single, isolated ideas weigh out of proportion to the various strains in their theme. They contemplate life with a serene smile. Constructive thinkers, on the other hand, are mainly preoccupied with their own speculations and build out of these, with the aid of the cement of logic, rounded systems of thought. Plato, Shankara, Descartes, Hegel, Bergson, Whitehead—to mention but a few names at random—belong to this group. The value of the work of these men depends on the beauty of their intellectual edifices and on the truth and coherence of their respective visions of reality.

Frankly, Sir Francis cannot be placed in any of these two classes of thinkers. He did not try to see life through the eyes of various characters, nor did he elaborate a new theory of the universe. His importance lies elsewhere.

He was an instinctive lover of beauty of thought and action, or, rather, a born connoisseur of ideas and character.

Spiritual arrogance would seem to be the bane of most theologians and thinkers. Many cultivated spirits in the West believe that their wisdom is the highest attainable by man. Most Easterns hold the same lofty opinion about the illumination of their race. Sir Francis was refreshingly free from this myopia of the spirit. Indeed, his was a stereoscopic vision, which embraced the best of the Orient and the Occident. Although a good Christian, he fully appreciated, nay reverenced, the inwardness of Asia. He held that the soul of Hinduism and Buddhism was at one with Christism. He was thus a real reconciler. He believed that the more intensely spiritual we became, the more quickly we would meet and mingle and broaden out into a happy brotherhood of man. This conviction led to the founding of the World Congress of Faiths, which owes practically everything to him. Sir Francis was sure—and he had a faith that dispels all clouds of doubt—that a new Renaissance, more glorious than any that went before it, was upon us. This is the marriage of East and West.

What inspired this great belief? I remember a long talk with him in 1936. Perhaps because I had accepted to speak at the Congress at very short notice, or perhaps because he was in a communicative mood, he spoke very freely and even eloquently. I cannot reproduce his exact words, but he held some such views as these.

The more a social group is evolved, he thought, the weaker it becomes. It is founded, it appears, more on faith than on fear, and a state which relies, for the safety of its institutions, on its armed forces is eventually lost. If a member of a primitive tribe—there are, really speaking, no savages to be found anywhere—submits to the dictates of its witch-doctor; if he indulges in dutiful cannibalism; if he has recourse to the practice of *couvade*, it is because he sees, behind his acts, a force which he cannot but obey. He does not even dream of fighting it. How dare he?

Reason makes and unmakes our laws; religion alone perpetuates them. As soon as the spirit, seduced by self-interest, approaches anything, it tends to destroy it. We must push it far, very far, before it stops and looks. The point is to conduct it to the level where it recognizes its impotence.

Spiritual law is much stronger than the secular. It bases itself on religion, which finds its support in God. If I examine religion and God I am tempted to see in them but human creations, though I recognize that they are powerful and subtle conceptions. But if I continue my search I come to the conclusion that I cannot create the order in which appearances manifest themselves; that I cannot really explain anything; that I cannot exhaust life; that I can neither define nor understand myself satisfactorily. There is a wall. The spirit stands dazed before it. I am compelled to retrace my footsteps, and ask myself if this difficulty cannot be overcome, if what my reason denies me cannot be given by something else. Will not revelation drag me out of the gulf where I find myself? I call to mind the words: "Faith is the substance of things unseen."

Desire is the great mystery, perhaps the only mystery. It is idle to look for its origin. Nature has invented it to perpetuate the species. We have gone beyond instinct, which always leads us, but whose power we feel but dimly. The demands of love are the most violent because they are the most concrete, because they interest our bodies here and now: they go further than the spasm which quietens them. They represent one of the aspects of the insatiable appetite which makes us go beyond our destiny and throws us, perhaps, into non-being. Our incomplete spirit searches the complete spirit. It avidly flings itself, weak and wild, on all that it thinks will round it off, and it would swallow up planets—nay, even the whole universe—without satisfying itself. It is the thirst for divinity that directs all our passions and thoughts to God.

Thus all makes us go to Him, the Impossible, the Absolute. He is the beginning and end of idealism. And He is, first, foremost and above all, a well of mystery. The roads that lead to Him are many; and all are divine. Here, on earth, moth and rust corrupt everything; only good deeds remain.

I hope I have succeeded in suggesting that Sir Francis was not only something of a saint and mystic, but also a true poet of action. Whether we approve of his adventure or not, we have to admit that he was a flaw in the glass through which the future showed itself in rosy tints.

WAR OF IDEAS IN IRAN

By F. J. Goulding

All those who have lived in Iran and learned to love the country and her people may feel for her deeply today. She is falling a victim to that all-pervasive war of ideas which is sweeping every country of the world. Iran's plight is the more tragic because she is caught up in a world tide of conflict at a time when she was struggling highly successfully for progress within herself.

As is only natural in advance of every kind, not everything is perfect, and faults and defects can be found. But it is always easier to point a critical finger than it is to give constructive aid, and this is a moment when in Iran, as in every other country, the forces that are fighting for the intellectual, moral and spiritual advance of the whole country and all its 13,000,000 citizens, need every supporting hand.

The recent visit of distinguished Iranian professors to the World Education Conference has drawn attention to the great strides which the country has been making. They were a charming and gifted group. A standard of great distinction is set by men like Dr. Ali Asghar Hikmat, who has served as Minister of Education, and at various times held three other Ministries, Dr. Ghulam Ali Ra'adi, Director-General of the Ministry of Education, Dr. Ghulam Hussein Sadighi, Director-General of the Secretariat (Dabirkhaneh) of Tehran University, and Dr. Isa Sepahbudi, all professors at the University and all members of the National Commission for Scientific and Intellectual Co-operation.

Dr. Ra'adi is a poet of very high rank in present-day Persia, and follows in the true tradition of the country's historic culture.

These men are among the leaders of the new education and cultural movement in Iran which has arisen since the last war. The revolutionary Government of Reza Shah were quick to realize that education was a tool with enormous possibilities for good or ill. For it is ideas and not material force that finally have the greatest creative or corrosive influences in the life of men and of nations. In Iran education has been a great instrument of change. A new educational system sprang up sporadically all over Iran after 1921. People were dissatisfied with the old Islamic instruction by rote. In 1928 a general order for the unification of the syllabus of all schools was issued. Schools were divided into primary, middle and senior, mostly on a French model. A few mission schools were encouraged to maintain American and English methods. In 1931 the primary schools were all nationalized and all foreign influences excluded from them. This was the price paid to prevent what were, to the Shah's mind, more sinister influences getting any hold on the people.

Still, there has been a great and rapid increase in education in the country during the twenty years 1920 to 1940. It is perhaps the greatest single influence on the life of the people. In 1920 expenditure was less than £100,000. In 1940 it was between £2,000,000 and £3,000,000. In 1922 there were only 612 schools. In 1940 there were 8,237, with a total enrolment of practically half a million students (496,960) and 13,646 teachers. In the same period the University in Tehran grew from practically nothing to the graduation of over 400 students annually. Adult education also in 1940 showed a total of 157,197 students in over 2,000 classes.

In 1945 a law was passed urging universal primary education. This will, of course, take years for completion. But it means that the country is rapidly becoming literate, while only a few years back it was 95 per cent. illiterate.

What influences are going to supply the reading matter for all these new readers? This growing educational advance must succeed in building the moral character which is the only basis of mutual confidence and of sound democratic institutions. Questions like the fixing of the Exchange, the combating of venereal disease, and the emergence of a sound Party system run in the interests of the country rather than in the manifold interests of large numbers of conflicting ambitions, all depend on the winning of the battle for character.

Here again Iran is at the centre of the fight going on through every country in the world between the advocates of a power-seeking, anti-moral materialism, and the advocates of a world of sound morals in which teamwork and service are the dominating ideas. The need was expressed clearly in 1935 by one of Iran's greatest modern writers, Djamalzadeh, author of "Yeki bud o Yek na-bud," the first novel written in the colloquial spoken language rather than the old classical literary language. "A wave of honesty," he said, "would settle our internal financial problems. An increase of sound home life would greatly lower the incidence of venereal disease. A new unselfishness would show us how to raise our standard of living, and bridge the enormous gap between the rich and the extremely poor peasantry; and with such a national character we could create a foreign policy that would win the respect and gratitude of our neighbours."

During their tour in England last month the education delegates were taken to see a football match in a large city. The crowds took them for the Dynamos and yelled for a speech. The Iranian delegates were led to the microphone. They expressed their gratitude for the acclamations and explained that they could not actually appropriate them to themselves in full, as they came from Persia, not from Russia, and that while Russia had great footballers, Iran had great poets. This is typical. The sensitive, friendly and appreciative spirit of Iran has much to give the world, and it is greatly to be hoped that she will come safely through her present troubles with the power to make her greatest contribution.

It has to be remembered that until twenty years ago more than 50 per cent. of Iran's 13,000,000 inhabitants were still nomads. A lot of these have now begun to take up a settled livelihood. The progress made in half a generation is great. The rest of the world will do its greatest service by strengthening the elements making for the best in Iran, and will find that in the end such a policy has served their own interests best.

For it is the distinctive mark of the twentieth century that materialism has swept forward aggressively on a world battle front which has crossed every national frontier and already caused two world wars. It would be tragic if now Iran is to be turned by sectional interests into another battleground for competing ideas. For, given proper assistance, Iran has a great part to play in a family of nations fighting side by side to build a sound world.

WELL-BALANCED PROGRESS IN INDIAN STATES

FROM A SPECIAL CORRESPONDENT

THE Hyderabad Budget for 1945-46, prepared for H.E.H. the Nizam's Government by Mr. Liakat Jung, Finance Member, maintains, and indeed enhances, the high reputation of the premier State for sound finance and many-sided social and economic advancement. If, as has been said, freedom is the soul of progress, sound finance is unquestionably its backbone, and inasmuch as in Hyderabad all the seven war-time Budgets have proved surplus Budgets (in spite of the fact that the only new taxes levied were the Excess Profits Tax and Excise Duty on tobacco), the State's unvarying adherence to this precept will be generally accepted as beyond challenge. On the other hand, while war-time taxation was light and the entire proceeds of the E.P.T. were earmarked for relief to the poor, a clear warning is given that before the very comprehensive "programmes of economic development and capital investment materialize, steps will have to be taken in the near future to augment the resources of the State by fresh taxation."

Agriculture, it is recognized, as in other parts of India, forms the basic industry, and appropriate measures are already going into operation to increase the quantity and quality of agricultural produce, with a high priority for foodstuffs. Concurrently

Government are expanding the sphere of activities of the other nation-building departments, headed by education, in which field provision is being made for a countrywide literacy drive, including the opening of literacy classes in all the offices of Government and in mosques, temples and churches, such classes to be run outside the office hours and the hours of worship. Over 100 students are to be sent to the United Kingdom and the U.S.A. for higher studies, and it has also been decided to depute a large number of officials, serving in various departments and in the university, for refresher courses and to benefit by British and American experience in the various branches of their work. A large number of scholarships are also to be given to students for training in British India. All these measures are designed to fill the gap which has occurred in the recruitment of officials with European qualifications, on account of the stoppage of foreign scholarships during the war.

Among irrigation projects sanctioned are the Tungadhadra, Manair and Chandrasage projects. As a result of the agreement reached between the Governments of Madras and Hyderabad regarding the partial distribution of Tungadhadra waters, a gigantic scheme of irrigation, with power possibilities, has reached its final stage, the cost to Hyderabad exceeding 12 crores. The Manair project is a hydro-electric scheme, while the Chandrasagar project ranks as a famine protective work. Towards the All-India project for 400,000 miles of new roads Hyderabad will contribute 7,740 miles of highways and major roads coming under the Public Works Department, and 12,127 miles under local authorities at a total cost of 28 crores.

In the field of industrial development much has already been achieved and post-war projects will ensure considerable further advances. As a result of pre-war programmes, the Hyderabad Allwyn Metal Works, Ltd., the Hyderabad Starch Products, Ltd., and the Hyderabad Chemicals and Fertilizers, Ltd., came into existence immediately after the outbreak of the war, with Government assistance and 50 per cent. participation in capital. The Nizam Sugar Factory, Ltd., Sirpur Paper Mills, Ltd., Hyderabad Vegetable Products, Ltd., Hyderabad Flour Mills, Ltd., and Taj Glass Works, Ltd., either existed just before the war was declared or were set up during the war by private enterprise. Government also participated in the share capital of the sugar factory and paper mills. After the establishment of Government control over capital issues more than thirty new industrial and commercial concerns were formed with a total issued capital of over 2¾ crores.

In Hyderabad, as in other parts of India, one of the major impedimenta to rapid industrial expansion is the paucity of trained personnel, especially at the higher technical levels. On this important aspect the Finance Member reports that: "As a corollary to the industrial development the necessity of dovetailing such plans with schemes for research and technical training has not been overlooked. . . . The types of industries for which development is planned cannot expand, unless personnel qualified in those particular lines is available. Conversely, there will be considerable waste if qualified men have to take unsuitable jobs because they have been trained in types of production for which there is little or no demand—at any rate, in the early stages. It is also apparent that, whether the Indian industrialists get all the foreign exchange they want or not, the flow of machinery into this country will be comparatively small for some years. Finally, there is the question of resettling the technicians who have been trained in the Forces. All the same, every effort is being made to harness the great natural and potential resources of the country so that in future Hyderabad may not occupy a less important position in industrial India." In the financial sphere it is notified that the opening of branches of the State Bank, both within and outside the Dominions, particularly at industrial centres, is under active consideration.

Post-war schemes in Hyderabad are estimated to cost about 250 crores in the next ten years. The directions in which further expansion of industries is possible have been examined by the Post-war Planning Committee and approved in principle by the Government, the declared objective being "to utilize natural resources of the country to their fullest extent and establish a large number of industries in the State at the earliest possible opportunity." In pursuance of this determination, in the case of some industries application for import of machinery has been made to the Government of India, and Mr. Laik Alli, a member of the industrial delegation visiting the

U.K. and U.S.A., has been authorized to contact manufacturers in the United Kingdom and obtain quotations for the machinery required.

As examples of specific projects the Government have decided to launch big industrial projects in the Godavary area where there are possibilities of generating hydro-electric power on a large scale, and coal, iron ore and limestone are also available. The aim is to create an industrial town by setting up a number of mills and factories, and a Chief Commissioner has been appointed who will prepare detailed schemes with the help of technical experts. The proposed industries include iron and steel, coal carbonization and its by-products, cement and textile mills, vegetable oil industry, rayon, etc. Referring to the completion of the purchase of Singareni Colliery shares, of which Government now hold 88 per cent., the Finance Member remarks: "The entire credit for effecting this arrangement goes to Mr. Ghulam Mohammed, ex-Finance Member." Finally, it is intimated that another measure of far-reaching importance to the State is the proposed establishment by Government of a company to be called "The Deccan Airways, Ltd.," in active collaboration with Tata Sons, Ltd., with an authorized capital of one crore. The details of the scheme have been worked out, after safeguarding the interests of Hyderabad.

It is hardly necessary to emphasize that British manufacturers have displayed the closest interest in the views and proposals put forward by the Indian States Delegation, with special reference to the States' requirements in terms mainly of capital goods, and Mr. H. S. Malik, Prime Minister of Patiala and head of the Delegation, has testified to the keen anxiety of all our leading industries to co-operate and help in every way possible. All the important States are now vying with British India in promoting full exploitation of their very varied and considerable industrial resources, and in some instances arrangements have already been completed for the establishment of branch factories on terms mutually advantageous to the British producers concerned and to the States. Other projects are under consideration and may be expected to mature in due course.

Happily, while increasingly anxious to foster modern processes of manufacture, the States are not allowing this form of development to diminish their constructive aid either to the great agricultural industry or to the cottage industries which, for as far ahead as can be seen, will remain an indispensable element in India's well-being. As we are reminded in memoranda circulated by the Chamber of Princes, the larger States have well-organized Departments of Industries, one of whose primary aims is the popularization of improved appliances in place of antiquated and wasteful ones. Handloom weaving remains one of the most flourishing industries in the States, largely owing to Government aid. In Hyderabad this takes the form of a Central Technical Institute which gives instruction to weavers, dyers, etc., in improved processes. In Mysore, it is estimated that 30,000 fly-shuttle looms are operating with an annual output of woven goods valued at a crore of rupees. New designs are furnished to weavers, supplemented when necessary by loans to purchase improved looms. The main cottage industries in Baroda are lacquer work and gold and silver thread making. The carpet industry in Kashmir, which dates back to 1423, is making marked progress in technical processes, without prejudice to traditional designs and quality. In Mysore the most important cottage industry is sericulture, which is practised in 2,500 out of 17,000 villages and engages roughly a sixth of the total population of the State. Experimental and demonstration silk farms have been established, which give practical training to all who are ready to take advantage of it. In Kashmir, Government have sanctioned the extension of mulberry plantations as well as the construction of a new hibernation house for the proper conservation of foreign as well as local seed. Baroda has established silk demonstration classes, and in 1943-4 seventy-five persons were trained in sericulture.

In a recent speech Lord Wavell expressed the hope that India's industrial revolution will avoid the grave error of an underpaid, badly housed and unhealthy working population from which Britain has taken more than a century to recover. It would be idle to deny that in most Indian industrial centres labour conditions still leave immense scope for improvement, as the Whitley Commission showed in detail, and it is sometimes suggested that in many Indian States labour conditions are less congenial than in British India. On the other hand, it is pointed out, many Indian

States have adopted effective measures to protect the rights and interests of labourers. Labour laws touching almost every phase of industrial life have been passed and the requisite administrative machinery has been set up to enforce these laws. Almost all the labour welfare legislation passed in British India has been adopted in the States, being most active in the industrial field. This fact is particularly worth emphasizing in order to refute the suggestion that the States are a haven for capitalists seeking excessive profits by recourse to abnormally cheap and unprotected labour.

REVOLUTION OF THE ROSE

By Professor A. J. Arberry

A cynic once said that if there were ever a revolution in Britain the whole affair would be conducted in the most sporting spirit, in strictest accord with the rules of cricket. It might have equally well been forecast, more in humour than irony, that the songs of an insurgent Persian proletariate would be unlikely to omit some reference to the immortal Nightingale and the Rose.

Revolution has not yet come to Persia, and it is no part of our present purpose to speculate whether it ever will. But some indication is now available as to how the descendants of Firdausi, Omar and Hafiz would express themselves in the event of violent insurrection. Recently a leftish party, calling itself the Tudeh (" Masses "), has emerged and taken its place upon the political scene. Its spiritual ancestry is not difficult to trace. Persia has echoed with the catchwords of communism, the slogans of social revolution, at various times over the past fifteen centuries. There are texts in Firdausi and Sa'di fit to adorn and give point to any syndicalist's harangues. In recent times, before the rise of Riza Shah, the ill-starred poet 'Ishqi even went so far as to propose a five-days " festival of blood " every year to purge the body politic of parasites.

" The tongue of 'Ishqi is the pupil of revolution ;
This tongue is not a red tongue, it is a banner of blood."

It is not, however, with the political programme or the problematic future of the Tudeh Party that this article intends to deal. Our interest is purely literary, our theme the poetry of proletarian Persia.

For material for this study we have a little volume newly arrived from Persia, *Adabiyat-i Tudeh* (*The Literature of the Masses*), forty-seven pages of Persian political verse. Much of it is fairly poor stuff, judged as literature, though not worse than the jingles British political propagandists invent. With a few exceptions, all of it seems to have been written during the past two years. Among the authors are lawyers, deputies, students, schoolmasters and workmen. The verse is almost entirely in the traditional style.

The rose is not forgotten. One of the better poems in the collection, by Ali Fattah-Pur, has the title " Others have culled the rose of this garden "; it is an almost perfect example of the Revolution of the Rose.

" In order to combat the mischief of a certain cat
A number of mice banded themselves together.
To begin solving this problem
They trimmed enough the carpet of deliberation;
That they might find salvation for their souls
They stamped their feet in self-defence.

Each one in that connection said something
According to the capacity of his intelligence.
Many were the plans that were drawn up,
In every way new and virgin designs,
But all the time some fresh problem
They saw standing in their way.

At last a certain mouse spoke up:
'It is necessary to fetch a bell,
So that when he comes we may be warned—
To bring it and then put it on his neck.'
All, when they heard this speech,
Entirely approved of his words.

To match speech with action
All leaped from their places;
They searched to procure the bell
Until finally they found what they desired;
They became altogether delighted and happy
And rubbed their hands for joy.

Now when it came to actually doing the job,
Not one out of that crowd volunteered
To tie on the cat's neck
The bell; and that was the upshot of the matter.
When the mice saw their incapacity
They all laughed at their idea.

My ideas and yours too, my friend,
Are entirely like the idea of the mouse.
When it comes to solving problems enough
Friends have the most perfect understanding,
But in action they are like the mice—
They are ever afraid of the adversary.

The sickness of the Persians is incurable
So long as the masses make no move
And toward the advancement of their purpose
For the sake of peace make no effort.
So long as there is division among the masses
They are like wool the food of moths.

Would that of the ancestral blood
There were one drop in the veins of the masses,
So that like their forebears among the nations
They might become famous in all matters.
But the living are worse than the dead
Because like the dead they do not stir.

The produce of thy toil, O masses,
Has become the revenue of a few worthless men.
My house and thine is ruined
For the sake of the mansion of a few men of wealth.
The thorn has entered into our foot:
Others have culled the rose of this garden."

The student of classical Persian poetry will not be surprised by the technique of these rhymes. The belling of the cat is as appropriate to this context as any fable of Æsop or Bidpai, as any true or fictitious tale quoted by Sa'di or Nizami or Rumi to illustrate a high moral or spiritual point.

The peasant addressing his son with good advice is a familiar theme in Persian poetry. The proletarian rhymesters have not failed to exploit its possibilities; but Parvin Gunabadi introduces a clever variant.

"To his father with a hundred wailings and laments there ran
On a festival day the dejected child of a workman.
'Father,' he said, 'I do not want any festive robe;
I am impotent with hunger: buy a barley loaf.
The severe cold last night drove sleep from my head;
The master's slap has made me very deaf.
Many a pretty carpet I have woven with a hundred pains;
Why have I no glittering coin but wet tears?*
Why is my annual hire a hundred rials?
Do not hire me out cheap again, father.'
The father said, 'There is no result of our labour;
This custom has for years made me a vagabond.
Out of my seventy years' hard toil and labour
What have I now, my son, except blood of the heart?'†
A neighbouring labourer gave ear, and said,
'Do not grieve, for the age of the tyrant has ended.
Do you know that the sun of truth has risen?
Have you not heard of the Union of Workers?
Rise up, and press the hand of our unity;
Rend asunder the chains of oppression and captivity.'"

It is not, however, the classical forms alone that are pressed into service by the poets of Persia's labour movement. There is a style of folk poetry, the lullaby, simple and tender and of great charm. The lullaby is parodied with bitter satire in a poem entitled "The Capitalists' Internationale."

"Workers, labourers, toilers, peasant masses!
(Lalala lala, lalala lala.)
Work for us, that we may reap the fruits of your toil;
Gather for us, and we will eat for you.
We are your guardians, we are your shepherds
(Lalala lala, lalala lala).
Spin for us, and we will cut off your heads with your cotton.
We are your guards; we will kill you with your own bullets.
We are your wise men: do you carp at us?
(Lalala lala, lalala lala).
Make for us, that we may profit of what you make;
Fight for us, that we may live in your country;
Beget for us, that we may enjoy your daughters
(Lalala lala, lalala lala).
Be drudges unto death, murmur not, and we will carry you decently and in order to your graves."

The same writer has a rhapsody, "Torrent," in the modern style.

1

"We are drops of water
Atom by atom
little by little
bit by bit
we flow into each other
we mingle together
we make rivers

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* A common conceit, the comparison of shining tears with glittering dinars.
† Sc. grief.

We are rivers
Gently, gently
subtly, subtly
softly, softly
we flow into each other
ourselves together
we make to run
till suddenly
we have fashioned a torrent

2

We surge we roar we thunder
we sweep away : all that hinders us
we overthrow : all that molests us
we make to tremble : every rock, every mountain, every mansion, every palace
heads in us are as a plaything
silvery bodies are as a child
cradle heavy, golden, or insignificant straw
in our waves are of one worth and value

3

We are flowing, roaring and boiling
in mountain and valley and in plain and hill
we make the plain level, wherever a rising is
with the hollows, wherever pride is with the arrogant
we are flowing, roaring and boiling."

This is a comparatively new thing in Persian literature. More familiar are the following images :

"The day will come when men will beat the drum of 'I am the Truth';*
That day will be the day of settling accounts and of gibbets erected."
(Minuchihr Paravi.)

"The world's ease is bound up with thy existence;
Through labour's alchemy the base copper turns to gold." (Parvin Gunabadi.)

"Fearing not the censor and the watchman speak the facts—
The masses at thy back will be like Alexander's rampart." (Minuchihr Paravi.)

"Always thou hast the sobbing of child and wife, but
He has nothing but a silvery-cheeked mistress.
That moment when blood is flowing from thine eye because of thy situation
He is only thinking of wine and feast and gambling." (M. Abbasi.)

"For the salvation of the worker lives are sacrificed.
May my life be the ransom of him who sacrifices his life for the worker . . .
Alas, that through the limitless oppression of the capitalist
The warp and woof of the worker in Iran has been torn to pieces . . .
We must be united behind this brazen wall
That the worker's evening may become like bright dawn."
(Ali Asghar Muiniyan.)

"Those who are members of the puissant party of the Masses
Have polished the rust of discord from the mirror of the heart."
(Ali Fattah-Pur.)

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* The old saying of Mansur-i-Hallaj, the martyr-mystic.

From two elegies for Sulaiman Muhsin Iskandari, a "martyr in the cause of eedom":

"Thou wast that Solomon by the seal of whose ring
The spirit of the demon of tyranny is condemned to destruction."
(Khusrau Darai.)

"Where is Solomon, that he may weep for our country's Solomon?
Where is Iskandar [Alexander], that he may lament for the grief of Iskandari?
If a rose from the rose-garden of the Party of the Masses has withered,
A hundred like it, narcissi and fresh tulips, have burst into flower."
(Ali Asghar Muiniyan.)

So the age-old genius of Persian song springs anew, in such an unlikely soil as proletarian politics. It is not for us to argue the rights or wrongs of the cause which has inspired this varied band of singers to burst into spontaneous song, but rather to observe and call attention to the curious rare felicity that graces much of this music. By our standards it may sound thin at times, artificial enough, even incongruous; judged by the unattainable standards of Firdausi and Hafiz it is for the most part fugitive and ephemeral; but it marks a stage in the close relationship between Persian politics and literature, and is thus worth studying on both accounts. We leave this little book of verses with the lines of Sayyid Muhammad Dawudi ringing in our ears:

"Parliament has become a home for evildoers,
And so decency and honour have become a storied legend.
The nation of Iran is ashamed in the presence of every foreigner--
Alas for us, our country has been wholly ruined.
Worker, how long wilt thou endure this pain and misery?
Cut off the hand of these domestic thieves that they may not do this mischief.

How long must the burden of the rich men's tyranny be borne?
They drink, O labourer, our blood in place of wine.
Arise! The music of nature plays this melody:
Worker, annihilate the impudent, shameless aristocrats.
How long must poverty, pain, affliction be tolerated?
How long must we clutch at the skirts of every dishonoured scoundrel?

Now, Party of the Masses, awaken the masses:
The time is critical--prepare for the battle.
O toiling multitude, manfully make ready for action,
Exalt the stature of those worthless ones—upon the gallows.
Make yourselves a people that have found release from the fetters of the worthless:
For your freedom's sake, betake yourselves to the Party of the Masses."

LOCAL GOVERNMENT ADMINISTRATION IN THE TURKISH REPUBLIC

BROADCAST FROM RADIO ANKARA

By J. Bell
(Member of the British Council staff in Ankara)

To-night in this talk I want to give you an outline of local government administration as it is carried out within the Turkish Republic. I need hardly remind you that local government of one kind or another has been in existence in the British Isles since the earliest times. Before county councils were created in 1888 much of the adminisation of the county was in the hands of the Justices of the Peace, while the affairs f the parish rested in the hands of the church vestry. At the present day, however, e administration of matters relating to police, licensing, reformatories, asylums, dustrial schools, education, highways, etc., public health and poor law, etc., has een handed over to the county councils and various other bodies under the supervision of the Ministry of Health. This scheme of local government was perfected y the Local Government Act of 1894, which now applies largely to rural and urban reas alike, except of course the London area, which is still administered under its ld charters and usages.

Similarly in Turkey from the dawn of history there has been some form of local overnment, in many ways similar to that which has been in existence in the British les, but since the creation of the Turkish Republic local government has been reatly developed and highly centralized. The Minister of the Interior is responsible or the administration of local government of the whole country, including cities, owns, and villages. He prepares the budget for both urban and rural areas, and is in harge of the general security and peace of the Republic.

According to the Turkish Constitution the country is divided into Vilayetler, Kazalar and Nahiyeler. Each vilayet is governed by an official called the Vali. In a city, in addition to the Vali, there is an official called the Belediye Reisi. He may even be the same person as the Vali. His duties are to supervise the administration of the poor law of the city, to be responsible for the cleansing regulations, and inspection of all food, water, restaurants, hotels, etc. In addition to his many other duties he controls the transport and upkeep of the streets, etc., and reports on all outbreaks of infectious diseases. Next to the vilayet is the kaza, which is governed by a Kaymakam. This official is responsible for his area or district within the vilayet, and is under the jurisdiction of the Vali.

A third official is the Nahiye Müdürü, who in turn governs his area and carries out his functions under the Kaymakam. In villages whose populations are under 2,000 inhabitants there is an official known as the Muhtar. This officer is elected by the local people and his work is unpaid, somewhat like an English J.P. With the exception of the Muhtar the officials above mentioned are appointed by the Minister of the Interior, after recommendation by the proper authorities. They are all paid Government servants and are specially trained for their work.

It will be seen therefore from the foregoing that there is no division or detail of local government which is not administered by a highly qualified staff of officials. An outstanding example of this fact is seen by anyone who has lived in Ankara. Such a resident is ever ready to pay tribute to the really excellent administration of the Vali and his department. One can state without fear of contradiction therefore that as far as the machinery of local government is concerned the Turkish Republic compares favourably with any other modern State.

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